



# Opportunity in America

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# The Future of Children

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# Introducing the Issue

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*Isabel Sawhill and Sara McLanahan*

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The United States has long been viewed as a place where with hard work most people can succeed, whatever their family background. Immigrants flock to the United States because of the nation's image as "the land of opportunity." An immigrant candle maker's son, Benjamin Franklin, grew up to become one of the Founding Fathers. An immigrant weaver's child, Andrew Carnegie, began by working at a cotton mill and went on to build a vast empire of wealth. And compared with some of the older democracies of Western Europe, the United States is often presumed to be a less class-based society. It is understood, of course, that opportunity has not been available to all. African Americans, in particular, have long struggled to escape the legacy of slavery. And women, denied political and economic opportunities until relatively recently, are still trying to catch up to men. But the dominant ideology in America has been a deep-seated belief in equality of opportunity.

Americans' commitment to the ability of individuals to fashion their own success has made them less willing than the citizens of other

Western democracies to redistribute income, leading to large income disparities between families at the top and those at the bottom of the economic ladder.<sup>1</sup> One reason such inequality may be less troubling to Americans than to many Europeans is the conviction that opportunity is available for all to achieve economic success.

But does this set of beliefs comport with reality? Is the United States such a classless society after all? And to the extent that the nation has fallen short of its ideals, what can be done? This volume attempts to answer these questions, drawing on some of the best research and data available. In the articles that follow, the authors examine opportunity in the United States today, how opportunity has changed over time, and how it varies by race, gender, and national origin. They also explore how education, health, and culture affect social mobility for children born in different circumstances and what government might do in each of these domains to make opportunity in the United States more equal.

Before going any further, we should say a few words about what we mean by *opportunity*,

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how it is measured, and how it relates to economic growth and inequality. A society with economic opportunity is one in which all children have a roughly equal chance of success regardless of the economic status of the family into which they were born. Stated differently, in such a society, the association between one's parents' income and one's own income should be small. This does not mean it should be zero. Some association between

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*With the rewards for economic success becoming bigger, as they have in recent decades, ensuring that competition is fair and open becomes even more important.*

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parent and offspring status is to be expected, as we discuss below—but a large connection suggests that the playing field is not level.

In these articles, the authors focus on several different measures of opportunity, but perhaps the most common is intergenerational elasticity (IGE), which measures the persistence of income across generations. A number of studies find that the IGE in the United States is in the neighborhood of 0.5, which means that about half the difference in income between families in one generation continues into the next generation. In short, Americans still experience both upward and downward mobility across generations, but a father's income says a lot about where his son will end up.

Questions about opportunity in America are especially important now, for several reasons.

First, income and wealth are more unequally distributed in the United States than at any time in the past half century. In 2003, the average CEO earned 185 times as much as the average worker, up from 24 times in 1965.<sup>2</sup> In 1979, the after-tax income of the top fifth of the population was 6.2 times higher than that of the bottom fifth; in 2003, the top fifth had 9.8 times as much as the bottom fifth.<sup>3</sup> According to Congressional Budget Office data, from 1979 to 2003 the average after-tax income of the top 1 percent of the population increased 129 percent, while that of the poorest fifth of Americans rose just 4 percent.<sup>4</sup> Wealth is even more unevenly distributed than income.<sup>5</sup> With the rewards for economic success becoming bigger, as they have in recent decades, ensuring that competition is fair and open becomes even more important.

Second, one reason why the United States has been considered the land of opportunity is that as a young nation with an open frontier and an unusually entrepreneurial spirit, it has been blessed with relatively strong economic growth through much of its history. Growth has meant that each generation could do better than the previous generation, even if children remained in the same relative economic position as their parents. Indeed, starting in 1820, per capita gross domestic product has risen an average of 52 percent for each succeeding generation.<sup>6</sup> In short, growth can go a long way toward neutralizing any negative effect of low mobility. Although it is quite possible that the nation's economy will continue to grow rapidly, family income growth has slowed in recent decades, suggesting that the process may now be less of a positive-sum game than it once was. From 1953 to 1973, median family income rose swiftly, at an annual rate of 2.8 percent. Since 1973, however, median family income has grown an anemic 0.6 percent a year, a rate that would entail a

17 percent increase in the typical family's income for each generation.<sup>7</sup> Thus, unless economic growth picks up, the next generation will experience an improvement in its standard of living that is only about one-third as large as the historical average for earlier generations.

We took an informal poll among some of the authors and discussants of this volume and asked, if they could be born with just one of the following characteristics, which would it be: their race, their class, their gender, or their national origin? Interestingly, the vast majority picked their class. Because the survey was casual, the results are only suggestive. But what they imply is that in public debates, Americans may give too much attention to race, ethnicity, and gender, and too little to class, or what sociologists call "the socioeconomic status of one's family of origin."

So class is important. But what can and should government do to promote greater opportunity? First, as the authors of this volume recognize, there are limits to what government can accomplish. One reason why children from high-income families are more successful than those from low-income families is that some of the attributes that contribute to success in both generations—ability, motivation, and health—are at least partially inherited. In other words, genes matter, and short of genetic engineering, children from different socioeconomic backgrounds will always have unequal chances for this reason alone.

A second reason why children of higher-status parents are more successful economically is that their parents often work hard to give them a variety of advantages, and by virtue of their income, education, and social networks, have the means to do so. If, as a na-

tion, we were willing to separate children from their parents at an early age, we could theoretically eliminate this second source of variation in child outcomes. Though such a policy is one that few people could support, public policies can nevertheless do quite a lot to compensate children for what their parents cannot provide. And because the kind of family one is born into is a matter of pure luck, we would argue that government should be doing more. (Indeed, it is interesting that the public and the political system reacted so generously in the wake of Hurricane Katrina, probably because people said to themselves, "There, but for the grace of God, go I." For some reason the bad luck of being born into a disadvantaged family does not always elicit the same kind of response.) So we asked our authors to consider the most promising ways for government policies to reduce the intergenerational persistence of income, and especially to focus on how to increase the chances that children at the bottom of the economic ladder have an opportunity to move up. After summarizing the most important findings in this volume, we will return to this question.

### **How Much Opportunity Exists in the United States?**

Intergenerational mobility speaks to the fluidity or openness of society, the extent to which individuals can better themselves through their own efforts and not be constrained by the class into which they were born. Researchers debate how best to measure mobility, with economists preferring to look at income and sociologists preferring a broader set of measures that usually includes occupation or education, or both. Even if one focuses on income alone, there is the question of what period to look at and whose income to count. For example, comparing a father's income when his son is age ten with

the son's income at age thirty picks up too many temporary fluctuations in income to accurately capture the longer-term economic status of either generation. And because an increasing number of families have two earners, such a measure fails to capture the total incomes of the two households. After correcting for such problems by including longer-term measures of income and more sources of income, recent research finds less mobility in the United States than earlier studies had suggested.

In their article, Emily Beller and Michael Hout examine both occupational and income mobility. Looking first at occupational mobility and dividing occupations into six categories, they find that among men born after 1950, 37 percent were upwardly mobile in their occupation, 32 percent were downwardly mobile, and 32 percent stayed in the same occupational category as their fathers.

Turning to income mobility, Beller and Hout once again find a rather mixed picture. On the one hand, research shows that one of the best predictors of where a son will end up is his parents' income. One study they highlight shows that a son born into a family whose income is in the bottom quartile of the distribution has a 42 percent chance of staying at the bottom. On the other hand, there is considerable mobility between income groups: 58 percent of sons born into the bottom quartile will move up to a higher income quartile as adults. The tendency of sons' incomes to look like their parents' is strongest at the top and the bottom of the income distribution. Persistence among those at the top is especially notable and may be related to the ability of wealthier families to protect their children from downward mobility. Indeed, the persistence of wealth across generations is even stronger than the persistence of income.

Whether any particular rate of mobility is high or low is a matter of judgment. But when Beller and Hout compare mobility in the United States with that in other industrialized countries, they find that U.S. occupational mobility is about average, or a little above; and U.S. income mobility is below average. Either way, it is hard to argue that opportunity among the native-born is greater in the United States than it is in most other countries. (Immigrants who come to the United States do experience upward mobility and are generally not included in the data used for these studies. Whether they do better than immigrants in other advanced countries is not clear.) Research also suggests that U.S. occupational and income mobility increased from the 1960s to perhaps the mid-1980s and declined thereafter, although a lack of complete data on the adult careers of men born after about 1970 prevents firm conclusions on more recent trends.

Finally, Beller and Hout emphasize that education enhances opportunity. In fact, college graduates have opportunities that no longer depend on their family background. But, as addressed more extensively in the three articles on education in this volume, educational attainment is itself very dependent on class or family income.

## Women and Minorities

Class is not the only barrier to upward mobility in the United States. Being female and being African American have also constrained opportunity. Melissa Kearney reviews the record and finds that women and minorities have made tremendous strides relative to men and whites during the past sixty years. Women are much more likely to work today than they were in the past, and as their labor market experience has increased, so have their earnings (in 1820, women earned 30 percent of what

men did; today, the comparable figure is 80 percent). For blacks, education, earnings, and occupational status have all improved dramatically relative to whites. Although some discrimination still exists in the labor market—as evidenced, for example, by results from hiring audits and experiments in which employers are presented with two resumes that are identical except for the race of the candidate—it is no longer as explicit or as important as it once was. For minorities, most of the remaining gaps in earnings appear to be related to the quality and quantity of education. For women, the remaining gaps more likely reflect the kinds of occupations entered and the amount of time worked, and both of these factors may, in turn, be related as much to women’s own preferences as to those of employers.

The dramatic changes in the position of women and minorities in recent decades complicate the study of intergenerational mobility. Because fewer women worked in the past, most studies of intergenerational economic mobility have focused on the relationship between the incomes of fathers and sons. What research there is on women suggests that their earnings are roughly as dependent on family background as men’s are. Another reason for the dearth of research on women is that in the past, when far fewer women worked outside the home, women’s economic status was more dependent on their spouse’s earnings than on their own. But because women and men tend to marry people with similar backgrounds, a woman’s *husband’s* earnings are just as highly correlated with the income of her parents as her own earnings are. Thus women (and increasingly men) have two equally important routes to upward (or downward) income mobility.

For blacks the story is even more complicated. Until recently, there was little relation-

ship between a father’s income and his son’s income because the distribution of income among blacks was very compressed. Almost all blacks earned low wages, and few advanced. As a result, few black parents had advantages they could pass on to their children. Today more black parents occupy positions in the middle or upper strata of society. But despite their recent success (and perhaps because it is so recent), black parents have

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much greater difficulty transmitting their status to their children. A recent study finds that black children born into the top quarter of the income distribution have a 15 percent chance of staying there, whereas white children have a 45 percent chance of staying. Similarly, black children born into the bottom quartile are four times as likely to remain there as white children. Some of this difference can probably be explained by racial differences in income and wealth among parents in the top and bottom quartiles. Put differently, poor blacks are poorer than poor whites, and wealthy blacks are not as well off as wealthy whites.

### **Immigrants**

As noted, America has long been viewed as a place where people from different countries could come to improve their economic fortunes and provide a better life for their children. Although most immigrants are better off than they would have been in their home

country, George Borjas notes that most enter the United States at a sizable earnings disadvantage relative to native-born workers, and that there is considerable variation in the earnings of different immigrant groups. He finds that second-generation immigrants have consistently done better than the first generation in terms of catching up to the native-born population. But given the size of the initial disadvantage of recent groups, catching up may take a long time.

In examining the extent to which the earnings of immigrants from different ethnic groups converge over time, Borjas finds that group differences tend to persist into the second and third generations. Although some of this “stickiness” is due to group differences in education, Borjas argues that part is due to “ethnic capital”—values and behaviors that are reinforced because immigrants tend to live in enclaves. Thus a Korean child whose parents have only a high school education may benefit from living in a Korean community that values college education and that sends most of its children on to college, whereas a Mexican child whose parents are similarly educated may suffer from living in a Mexican community with different values, where most children do not attend college. Borjas thus notes a possible trade-off between maintaining a strong ethnic identity and assimilating rapidly into the native population to promote economic success. He believes that “ethnic stickiness” works against the upward mobility of many groups of immigrants.

Borjas cautions that the immigrant success stories of the twentieth century may not be repeated this century. Today, with many fewer opportunities for low-skilled workers, weaker pressures for assimilation, and a much larger concentration of low-skilled workers in the immigrant pool, poor immi-

grant groups will find it harder to reach parity with native-born Americans.

## Education

Americans have long viewed education as the primary way for children from less advantaged backgrounds to move up the economic ladder. And America was the first country to provide free elementary education to all children, at least in the northern states. Because education is such an important potential force for upward mobility, this volume includes three articles on the current education system and its role in creating equal opportunity: one on preschool programs, one on elementary and secondary schools, and one on higher education.

### Preschool Programs

Preschool programs can increase upward mobility among children from disadvantaged backgrounds under two circumstances. First, the programs that low-income children attend must be of the quality and intensity required to increase the children’s future educational attainment and economic success. Second, low-income children must either have more access to these programs than more advantaged children or be disproportionately advantaged by them. Steven Barnett and Clive Belfield assess the evidence on these two propositions.

Based on their review of a variety of early childhood programs, they conclude that the most effective programs are very high-quality or intensive interventions (such as the model Abecedarian or Perry Preschool programs), followed by high-quality public pre-K programs, Head Start, and typical child care or family support programs, in that order. Head Start, for example, tends to be only one-tenth to one-fourth as effective as the more intensive programs. These latter programs are

characterized by highly qualified, well-paid teachers, high ratios of teachers to children, and long-term participation by the children. To assess how any program affects the longer-term outcomes relevant to social mobility, researchers need extensive follow-up data, which are not always available. But based on existing data, they find that the intensive programs have large effects. Children who participate are much less likely to be placed in special education, to repeat a grade, and to drop out of high school. They are more likely to graduate from high school and go on to college, more likely to have better health, less likely to give birth as a teen, and less likely to use drugs or be involved in a crime.

Barnett and Belfield find that a large share of young children already attend some kind of preschool—42 percent at age three and 67 percent at age four. (The programs they look at vary widely and include Head Start, programs for disabled children, state pre-K programs, center-based child care, and private nursery schools.) Despite efforts to target resources on disadvantaged children—for example, in Head Start—the likelihood of being enrolled in preschool continues to be higher among children from more advantaged families than among those from less advantaged families. Specifically, more than half of all poor children aged three and four are not enrolled in preschool. And participation is especially low among the children of mothers with little education, among Hispanic families, and in the western United States. Finally, access is not the only problem. The quality of the programs that low-income children attend is lower than the quality of those that higher-income children attend. The authors conclude that although public programs have increased preschool enrollment among children from less advantaged families, they could do more.

Barnett and Belfield also examine whether preschool programs benefit disadvantaged children more than their advantaged peers. Evidence of such differences in effectiveness is somewhat mixed, but on balance and especially for outcomes like crime, fertility, and welfare participation, the programs do appear to give disadvantaged children a relatively greater boost. And even if the programs do not confer large benefits on the children

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themselves, they have second-generation effects (that is, on the children of participants), especially in the important areas of crime, fertility, and welfare participation. Expanding these programs, then, could modestly improve intergenerational mobility. The authors argue, however, that targeting these programs to the disadvantaged may not be the best option, for three main reasons: such targeting is often imperfect, universal programs are politically more popular, and mixing children from different backgrounds in the same classrooms may have desirable effects.

### **Elementary and Secondary Schools**

In their article on elementary and secondary education, Cecilia Rouse and Lisa Barrow examine a set of propositions similar to those studied by Barnett and Belfield: does family socioeconomic status affect educational outcomes, and are those outcomes an important determinant of adult earnings? Although

links between family background, schooling, and ultimate economic success are evident in the data they review, Rouse and Barrow also delve into a much more difficult question—are these links causal or do they reflect the inheritance of ability across generations? After reviewing an interesting body of sophisticated research, they conclude that a family's socioeconomic status does lead to greater school success for the children, and that schooling strongly affects earnings, even for children of the same ability. Rouse and Barrow go on to ask why children from more advantaged families get more or better schooling than those from less advantaged families. Because public education at the elementary and secondary levels is virtually free to all students, the answer would seem to involve such things as class differences in the expectations of parents or teachers or in perceptions about the longer-term benefits of doing well in school. In addition, because children normally attend schools in the neighborhood where they live, lower-income children may attend schools that are inferior to those their more advantaged peers attend.

Rouse and Barrow do not find large differences in spending per pupil or pupil-teacher ratios. But they do find that children from more affluent families attend better-managed schools and schools with better facilities, and that they have more experienced teachers and more academically oriented classmates. They conclude that family income affects school quality and that such variables as class size, facility quality, the efficiency with which administrators spend funds, and the quality of teachers affect what children learn. Rouse and Barrow also look at the likely effects of the recent policy emphasis on school accountability, charter schools, and experiments with school vouchers and conclude that any gains for less advantaged children

from these institutional reforms are likely to be small at best.

Rouse and Barrow's overall conclusion is that public schools *as currently organized* tend to reinforce the transmission of socioeconomic status from parents to children. Policies aimed at improving school quality, such as smaller class sizes or better teacher quality, can increase opportunity, but schools can go only so far in promoting opportunity as long as wealthier parents use their abundant resources to provide more enriched environments for their children.

### College Education

Unlike most elementary and secondary education, the U.S. system of higher education is supported by a mix of public and private funds. Robert Haveman and Timothy Smeeding argue that public subsidies for higher education are justified on grounds of both efficiency and equity. Public investment in higher education is efficient because in the absence of a public subsidy, parents and students would underinvest in their schooling, thus reducing overall productivity. Subsidizing higher education is equalizing because, in principle, higher education acts as what Haveman and Smeeding call a “mobility-increasing filter.”

The authors examine how well the mobility-increasing filter is working, whether the college admission process differs for youth from different family backgrounds, and how to make the current system more conducive to opportunity. They argue that despite an overall increase in U.S. college attendance during the past two decades, class disparities in attendance have widened—that is, attendance has increased more among children from high-income families than among children from low-income families. The gap is espe-

cially pronounced for youth attending four-year colleges. The authors conclude that the mobility-increasing filter is not working as well as it once worked or should be working.

They also examine how the college admission process differs for youth from different class backgrounds. To get into college, a student must be motivated to attend and must be academically prepared. He or she must also complete application forms, take special exams, and be able to pay the fees. Children from high-income families, say the authors, are much better able to make their way through this maze than are children from low-income families, who are less well prepared for college, less likely to understand the application process, and less likely to have accurate information about the real costs of college. Changes in the cost of college and in financial aid policies have also reduced opportunities for disadvantaged youth to attend college.

All these factors have made it more difficult for students with the least means to get into the best colleges. Ranking the colleges into four tiers, the authors find that 74 percent of students in the top tier are from the highest socioeconomic quartile, while only 3 percent are from the lowest quartile. Even in the bottom tier of colleges, only 16 percent of the students are from the bottom socioeconomic quartile and 46 percent are from the top. And although community colleges, which are intended as a way to facilitate entrance into four-year colleges, are evenly balanced throughout the quartiles, the transfer rate of students from community colleges to four-year colleges is not high. Thus there is a widening gap between the highest and lowest socioeconomic quartiles in college enrollment, in completed credits, and in graduation rates.

Finally, the authors suggest several ways to improve the mobility-increasing filter. One is for colleges to outsource the provision of dormitories, food service, and other operations, which would reduce costs and allow them to focus on their specialty, education. A second is to price education at its real cost, instead of providing the subsidy to the more affluent that even full-price tuition now includes.

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*There is a widening gap between the highest and lowest socioeconomic quartiles in college enrollment, in completed credits, and in graduation rates.*

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Such a step would provide sufficient revenue to offer additional financial aid to low-income students. A third possibility is to base state funding for higher education on criteria such as the retention rates and graduation rates of students from lower-income families, an increase in enrollment of such students, and affordable tuition, rather than giving state-supported universities a lump-sum appropriation with no reward or penalty for performance. Other suggestions include limiting public subsidies to wealthy private schools, directing assistance from states (or even the federal government) to low-income students instead of passing it through the institution, and linking repayment of loans to income, thus enabling graduates to pay off loans even if they take lower-paying jobs. All these changes might help increase low-income students' enrollment in colleges and universities and improve the mobility filter.

## Child Health

Child health will affect the intergenerational link between the income of parents and their offspring if family income is related to children's health and if children's health is related to their future economic success. Anne Case and Christina Paxson examine both these propositions. First, they find that par-

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*As children grow older, differences in health between poor and nonpoor children become more pronounced.*

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ents' income is indeed linked with children's health and trajectories in health. Poor children have poorer health than nonpoor children. And as children grow older, differences in health between poor and nonpoor children become more pronounced. Blacks and Hispanics show the same pattern as whites. And children in countries with universal health insurance, such as Canada, show the same pattern as children in the United States.

Not only are poor children more likely to experience such health problems as low birth weight, asthma, heart conditions, mental retardation, and vision and hearing disorders, but their prognosis is worse than that of nonpoor children with the same conditions. The authors attribute this finding to differences in the severity of the illness, in the quality of medical care received, and in parents' ability to manage their children's care.

Case and Paxson also examine whether poor health in childhood leads to lower income in adulthood. Although they note that many studies suggest that it does, they caution that

the evidence is based on observational rather than experimental data, making it difficult to establish causality. Nevertheless, they point out that poor health in childhood might reduce income in adulthood both by reducing schooling and by impairing health in adulthood, thus limiting employment prospects and the number of hours worked.

In discussing policy implications, the authors call for better programs to help pregnant women quit smoking. They note that nutrition programs such as WIC have improved children's health, but they caution that evidence on the benefits of prenatal care, as practiced today, is surprisingly mixed and that both the food stamp program and the national school lunch program also appear to have mixed results. They point out that although the idea that increased access to health insurance would equalize health outcomes was the driving force behind Medicaid expansions of the 1980s and 1990s, access to care may no longer be the primary barrier to the improvement of health outcomes among lower-income children. The challenge today is to improve the quality of both prenatal and pediatric care.

## Culture

Ensuring that all children are healthy and well educated is a goal that most people would support, although they might disagree about how much the public should invest and how best to use the money. Much more controversial are programs that aim to change family behaviors. Nonetheless, much of today's political rhetoric and many of today's policy initiatives are aimed at encouraging parents to marry, work, and participate in faith-based programs. In their chapter, Jens Ludwig and Susan Mayer examine the extent to which these behaviors improve children's chances of avoiding poverty as adults.

Ludwig and Mayer argue that the effect is unlikely to be large, for two reasons. First, the evidence for a causal link between these parental behaviors and children's chances of growing up poor is relatively weak, making it impossible to be sure whether changing parents' behavior would change children's economic outcomes. Second, most children who become poor as adults do not grow up in a single-parent family, a family with no full-time worker, or a family that does not attend religious services. Therefore, even if the effects of family behavior on intergenerational poverty were causal, getting all parents to marry, work, and attend church would have only a minor effect on the poverty rate in the next generation. The authors call this the poverty-prevention paradox.

The calculations presented by Ludwig and Mayer help illustrate the paradox. Using data for children born during the 1970s, they find that the odds of being poor in adulthood are around 10 percent for children who grow up in "Ozzie and Harriet" families, with two biological parents. For children growing up with only one parent, the chances are around 17 percent. Because the first group of children is so much larger than the second group, they account for a much larger share of the poor in the next generation. According to the authors' estimates, if every home had two parents, this would reduce poverty in the next generation by only one-sixth (assuming that all the association between these behaviors and children's chances of being poor is causal, which it obviously is not). A policy that could put a second parent into even half of all homes that now have one parent—a huge success by social policy intervention standards—would reduce poverty in the children's generation by less than 10 percent. Ludwig and Mayer conclude that there are more effective ways to increase

social mobility than by targeting these family behaviors.

The article by Ludwig and Mayer is provocative, and the poverty-prevention paradox they describe underscores an important point: eliminating disparities in family behavior in one generation would not eliminate the problem of poverty in the next. Indeed, a highly mobile society will, by definition, always produce a new group of families at the bottom of the income distribution. So the poverty-prevention paradox is not inconsistent with a relatively high degree of economic opportunity.

## Conclusions and Policy Implications

Growing income inequality in the United States would be less troublesome if all U.S. residents had the same chance to get ahead. But the fact is that family background matters. Americans need to pick their parents well. Moreover, the United States does not have a higher degree of mobility than other industrialized countries. Increases in income inequality and wealth inequality in recent decades are likely to persist from one generation to the next. Some observers believe the appropriate policy response is to adopt more progressive income or benefit programs. Others argue for redressing the balance by improving opportunities for all citizens to get ahead. This volume focuses on the latter—in part because it is "the American way." But we believe that both approaches are needed.

The persistence of wealth across generations is high, and children who grow up in affluent families are greatly helped by the advantages associated with wealth. The current estate tax curbs at least some of this persistence and enables each generation to start on a slightly more even playing field than would otherwise

be the case. But the effects of the estate tax are modest. In 2006, less than one-half of 1 percent of all estates will be subject to taxation.<sup>8</sup> Some people want to raise the estate tax. Others want to repeal it. We believe the repeal or further erosion of the estate tax would be a mistake. The current (2006) exemption of \$2 million per person (or \$4 million per couple) provides more than ade-

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*The persistence of wealth across generations is high, and children who grow up in affluent families are greatly helped by the advantages associated with wealth.*

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quate motivation for parents to save and a rich legacy for their children.<sup>9</sup>

As important as the estate tax is, it is small relative to the effects of education on opportunity. Education, after all, is considered the great leveler, the most important opportunity-enhancing vehicle available to any society. But the three relevant articles in this volume all conclude that education in the United States tends to reinforce rather than reduce divisions based on class. This conclusion is supported by three facts. First, the U.S. education system is not as strong as that in some other countries. Thus it does less to ameliorate the effects of family background than it might. Second, much education at the preschool and postsecondary levels is still privately financed, effectively making it unavailable to children from less wealthy families. Third, poor children tend to go to poor schools. In short, providing more equality of

opportunity requires that schooling at all levels be of higher quality and that children from less advantaged backgrounds have the same educational opportunities as those whose parents can afford to enroll them in nursery school at an early age, live in a high-priced neighborhood with good schools, and send their children to college.

Ensuring that children from disadvantaged families have access to high-quality early education is particularly important. As emphasized in another issue of *The Future of Children*, test score gaps by race and socioeconomic status are large even before children enter kindergarten; preschool programs have the potential to reduce these gaps.<sup>10</sup> Closing the gap in quality at the elementary and secondary level will require higher-quality teachers, smaller class sizes, continuing assessments of student performance, and more effective ways of providing extra help to schools serving less advantaged families.<sup>11</sup>

One proposal that is getting increased attention involves a change in the way teachers are recruited and retained. Today, teachers in the public schools must be licensed or certified to teach, but there is no evidence that these initial credentials make much difference to what children learn. Drawing teachers from a broader pool, assessing their ability on the job, and then providing tenure to those who succeed could, according to the evidence, improve student outcomes substantially.<sup>12</sup>

Attaining a college degree greatly enhances mobility by breaking the link between family background and adult success. But with college attendance increasingly related to family resources, the United States must redouble efforts to provide a college education for

well-qualified children from less advantaged families.

Although discrimination against women and minorities has declined over the past half century, neither group has completely caught up with white men. In the case of women, the gap is primarily related to the kinds of jobs they hold and the time they spend in the workforce, some of which may be due to personal preferences. In the case of minorities, the gap is primarily related to a lack of education. But for both groups the gaps may be related less to race and gender and more—especially in the case of minorities—to issues of class. Policies should thus emphasize better education for minority groups as much as, if not more than, affirmative action per se.

The nation's latest waves of immigrants are less skilled than earlier arrivals and are thus finding it more difficult to assimilate and achieve parity with native-born workers. To avoid the challenges presented by a group of immigrants who remain stuck at the bottom of the economic ladder, the United States may want to tighten immigration policy somewhat or base it less on family ties and more on the skills that immigrants bring into the country.<sup>13</sup> Two other policy priorities are to ensure both that immigrant children learn English and that they get a good education.

Good health is another advantage that higher-income or better-educated families pass on to their children. The expansion of Medicaid in the 1980s and 1990s has helped equalize access to health *care* across the income distribution, but disparities in health *outcomes* remain because of differences in the quality of care received, the ability of parents to use the health advice they get from pediatricians, or lifestyle and genetic factors that trump access to care. Greater emphasis on good nutrition (see the *Future of Children* volume on childhood obesity),<sup>14</sup> on smoking cessation for pregnant women, and other preventive measures may have as much impact as further extending health insurance to low-income families.

A great deal of social mobility is attributable to characteristics of families that cannot be measured simply by looking at their economic resources. An intact family, with a steadily employed parent, that transmits good values to children may produce more successful children than a wealthier family without these characteristics. But how much do these cultural attributes matter? The evidence in this volume suggests that their role is smaller than many have argued, but we believe the jury is still out on exactly how these hard-to-define attributes of a family influence its children's chances of success.

## Notes

1. Gary Burtless and Christopher Jencks find that market income inequality in the United States is similar to that in other OECD countries but that taxes and transfers did more to redistribute these market incomes in other OECD countries in the 1990s, with the result that disposable incomes were more unequal in the United States in that decade. Gary Burtless and Christopher Jencks, "American Inequality and Its Consequences," in *Agenda for the Nation*, edited by Henry Aaron, James Lindsay, and Pietro Nivola (Brookings, 2003), p. 76.
2. Lawrence Mishell, Jared Bernstein, and Sylvia Allegretto, *The State of Working America 2004/2005* (Cornell University Press, 2005), p. 214.
3. Authors' calculation from Congressional Budget Office, "Historical Effective Federal Tax Rates, 1979–2003" (December 2005), table 1-C. The CBO calculations use the Census Bureau's fungible value measure to determine the cash equivalent of in-kind government transfer payments. The CBO adjusted the resulting measure of comprehensive income for differences in the size of households in order to assign households to income quintiles. Quintiles contain equal numbers of people, but because households vary in size, quintiles generally contain unequal numbers of households.
4. Ibid.
5. Arthur B. Kennickell, "Currents and Undercurrents: Changes in the Distribution of Wealth, 1989–2004," Finance and Economics Discussion Series 2006-13 (Federal Reserve Board, 2006), [www.federalreserve.gov/pubs/feds/2006/200613/200613abs.html](http://www.federalreserve.gov/pubs/feds/2006/200613/200613abs.html) (June 15, 2006).
6. Authors' calculation interpolating data from Angus Maddison, "The World Economy: A Millennial Perspective" (Paris: Organization for Economic Cooperation and Development, 2001), tables A1-c and A1-d.
7. Authors' calculation from U.S. Bureau of the Census, "Historical Income Tables—Families," *Current Population Survey*, table F-6, [www.census.gov/hhes/www/income/histinc/f06ar.html](http://www.census.gov/hhes/www/income/histinc/f06ar.html) (May 18, 2006). The Census Bureau adjusts income data for inflation using the CPI-U-RS.
8. Authors' calculations using Urban-Brookings Tax Policy Center, "Table T06-0020. Current Law: Distribution of Gross Estate and Net Estate Tax by Size of Gross Estate" (January 23, 2006), [www.taxpolicycenter.org/TaxModel/tmdb/Content/Excel/T06-0020.xls](http://www.taxpolicycenter.org/TaxModel/tmdb/Content/Excel/T06-0020.xls) (May 18, 2006); and Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, *2006 Annual Report* (2006), tables V.A1 and V.A2, [www.ssa.gov/OACT/TR/TR06/V\\_demographic.html](http://www.ssa.gov/OACT/TR/TR06/V_demographic.html) (May 18, 2006).
9. Economic Growth and Tax Relief Reconciliation Act of 2001, Public Law 107-16, subtitle C, "Increase in Exemption Amounts," sec. 521(a). See also Leonard Burman and William Gale, "The Estate Tax Is Down, but Not Out," Tax Policies Issues and Options Policy Brief 2 (Washington: Urban Institute, December 2001).
10. See "School Readiness: Closing Racial and Ethnic Gaps," *Future of Children* 15, no. 1 (2005).
11. See Jens Ludwig and Isabel V. Sawhill, "Success by Ten: Intervening Early, Often, and Effectively in the Education of Young Children" (Georgetown University and Brookings, 2006); and William T. Dickens, Isabel V. Sawhill, and Jeffrey Tebbs, "The Effects of Investing in Early Education on Economic Growth," Working Paper (Brookings, April 2006).

12. For a set of specific, evidence-based proposals on effective ways to intervene, see Robert Gordon, Thomas J. Kane, and Douglas O. Staiger, "Identifying Effective Teachers Using Performance on the Job," Hamilton Project White Paper 2006-01 (Brookings, 2006).
13. See George Borjas, *Heaven's Door: Immigration Policy and the American Economy* (Princeton University Press, 2001).
14. "Childhood Obesity," *Future of Children* 16, no. 1 (2006).



# Intergenerational Social Mobility: The United States in Comparative Perspective

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*Emily Beller and Michael Hout*

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## Summary

Emily Beller and Michael Hout examine trends in U.S. social mobility, especially as it relates to the degree to which a person's income or occupation depends on his or her parents' background and to the independent contribution of economic growth. They also compare U.S. social mobility with that in other countries. They conclude that slower economic growth since 1975 and the concentration of that growth among the wealthy have slowed the pace of U.S. social mobility.

In measuring mobility, economists tend to look at income and sociologists, occupation. The consensus among those measuring occupational mobility is that the average correlation between the occupations of fathers and sons today ranges from 0.30 to 0.40, meaning that most variation in the ranking of occupations is independent of social origins. Those measuring income mobility tend to agree that the elasticity between fathers' and sons' earnings in the United States today is about 0.4, meaning that 40 percent of the difference in incomes between families in the parents' generation also shows up in differences in incomes in the sons' generation.

Beller and Hout show that occupational mobility increased during the 1970s, compared with the 1940s–1960s, but there is some evidence to suggest that by the 1980s and 1990s it had declined to past levels. Existing data on income mobility show no clear trends over time, but increases in economic inequality during the 1980s made mobility more consequential by making economic differences between families persist for a longer time.

In international comparisons, the United States occupies a middle ground in occupational mobility but ranks lower in income mobility. Researchers have used the variation in mobility to study whether aspects of a country's policy regime, such as the educational or social welfare systems, might be driving these results. There is as yet, however, no scholarly consensus about the sources of cross-national differences in mobility.

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Most Americans think it unfair when things they cannot control limit their chances to succeed in life. Particularly un-American is the notion that circumstances of birth set life on a course that may be hard to alter through one's own efforts. So, rags-to-riches stories are popular, and crowds cheer for the underdog. Academic research on social mobility goes beyond the stories and the drama to quantify the link between circumstances of birth and economic success, both for the population as a whole and for important and interesting groups within it. Sociologists and economists put numbers to patterns by comparing the social and economic success of Americans with an absolute standard that is completely free of traces of birth and with a relative standard that is based on recent experience or the current experience of other countries. On the absolute standard, Americans' occupations and incomes are tied much more closely to their parents' occupations and incomes than they would be in a world where circumstances of birth were irrelevant for adult success.<sup>1</sup> On the relative scale, ties between people's current occupations and incomes and those of their parents are about what they have been over the past twenty-five years, but substantially weaker than they were in the early 1960s.<sup>2</sup>

Social mobility from one generation to the next is the difference between a person's current income, wealth, or occupation and that of the family that raised her.<sup>3</sup> An opportunity structure promotes social mobility if it allows people to escape poverty while limiting the degree to which those who grow up in privileged homes get advantages throughout their lives. Growth promotes mobility, too, by raising everyone, regardless of background, above the level of that background. In this ar-

ticle we will focus most on the opportunity structure because scholars have written more about it. But it is important to keep in mind how important growth can be. Nearly everyone who grew up in the Great Depression experienced substantial upward mobility in adulthood. It was not that America was more equitable when the children of the Great Depression grew up than it was before or has been since; it was that the nation recovered from its economic collapse and therefore most people were much better off. Social mobility should not be confused with *inequality*, which refers to differences among people in wealth, income, and occupational status at any point in time. Social mobility would not matter in a society in which there was no inequality. Parents would have no advantages to bequeath to their children, and no one would care where they ended up. But when inequality is great, social mobility matters a lot. The advantages of rising to the top are large, and the consequences of remaining stuck at the bottom are much more serious.

Social mobility is high if the opportunity structure is open—that is, if the barriers and advantages associated with a person's background are few. But openness of that sort is not the only way to spur intergenerational mobility. Mobility is also high if growth is strong and widespread enough to make everyone better off. The opportunity structure, in the form of barriers and advantages, is symmetrical in the sense that in the absence of growth, removing a barrier that might block a person who starts low also implies removing an advantage from a person who starts high. Growth, on the other hand, can—in President John F. Kennedy's famous phrase—lift all boats. If growth is widespread, it creates new opportunities that can lift a person who starts low without knocking down a person who starts high. But slow

growth reduces social mobility, as does a closed opportunity structure.<sup>4</sup>

Growing inequality does not necessarily increase or decrease the prevalence of social mobility, but it does increase the difference between the upwardly mobile and the downwardly mobile. When inequality increases, extreme incomes, occupations, and amounts of wealth (high and low) become more prevalent, and fewer people occupy the middle of the distribution. So an upwardly mobile person has farther to rise and a downwardly mobile person has farther to fall in a more unequal society. Also (and this is a little less intuitive) an increase in inequality over a person's lifetime increases the probability that someone who starts life in extreme privilege will stay there and (simultaneously) increases the probability that someone whose parents were poor will also be poor. Those increases in immobility are offset, though, by a decrease in the probability that someone whose parents were about average will end up near the average (because rising inequality eliminates positions near the average). The increased immobility at the extremes and mobility in the center do not imply a stronger or weaker correlation between circumstances of birth and adulthood; they follow from the definition of inequality—more extreme outcomes, fewer average ones.

It is possible to talk about social mobility in general terms, but most researchers focus on one of five specific forms of mobility: educational mobility, occupational mobility, wage mobility, family income mobility, and wealth mobility. Each has its own interesting properties. We focus on two types: family income mobility and occupational mobility. The first—typically the domain of economists—is the extent to which an adult's (or family's) relative income or rank in the income distribu-

tion is similar to his or her father's (or father's family's) relative income or rank. The second—most often the province of sociologists—is the extent to which the status or type of job a person winds up with resembles that of his or her father or mother.

We review research on income and occupational mobility, examining changes in the opportunity structure and growth, as well as the

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*Growing inequality does not necessarily increase or decrease the prevalence of social mobility, but it does increase the difference between the upwardly mobile and the downwardly mobile.*

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effects of inequality. We first try to quantify the extent of intergenerational occupational and income mobility in the United States. We then compare estimates of mobility in the United States today with evidence both from the American past and from cross-national comparisons. Where possible, we discuss the intergenerational persistence of wealth and property as well. Intergenerational educational mobility is another fascinating topic, but it is beyond our scope in this review.

## **Measuring Intergenerational Social Mobility**

Important differences in the concepts of occupational and income mobility can help to explain how it is possible that mobility in one domain might be greater than mobility in another. People's incomes vary significantly even if their jobs share the same occupational

category. Analyses of occupational mobility and analyses of income mobility provide different pictures of people's prospects, because they ask different questions. Intergenerational persistence in occupational status is not a good proxy for persistence in income, and vice versa; a person who is upwardly mobile occupationally does not necessarily enjoy a higher relative income than his or her parents (and vice versa).<sup>5</sup>

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*Analyses of occupational mobility and analyses of income mobility provide different pictures of people's prospects, because they ask different questions.*

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In addition, analysts investigating occupational and income mobility face different limitations and use different methodologies. On the one hand, occupation is easier to measure than income because people remember their parents' occupations reliably and with a high degree of accuracy, whereas dollar amounts are much harder to recall, and most people plainly do not know their parents' incomes. Inflation erodes the value of the dollar over time, too, further complicating the task of evaluating parents' incomes, even if they are known. On the other hand, occupations can be hard to rank, whereas income is straightforwardly scored in dollars (or the relevant local currency). In addition, researchers interested in occupational mobility often want to measure the component of mobility that is independent of growth, whereas income mobility researchers do not typically distinguish between the two.

Researchers interested in occupational mobility must first come to grips with the problem of how to rank occupations, getting beyond the qualitative detail of specific job descriptions to arrive at useful categories or scores. Some solve the problem by grouping occupations into relatively large classes. Others rank them on a scale from 0 to 100.<sup>6</sup> In the first approach, researchers gather occupations into several broad classes, such as professionals (for example, doctors and lawyers), skilled trade workers (for example, electricians and carpenters), or the self-employed, and then create a matrix that allows them to compare each person's occupation with his or her father's occupation. While this approach reveals details of which occupations are linked across the generations and which are not, its results are hard to summarize unless the categories are clearly ranked.

Ranking allows the straightforward estimation of an overall *intergenerational correlation* between the ranking of a person's occupation and that of his or her father. A correlation of 0 implies that a person's occupational rank is completely independent of that of his or her parents, and therefore that there is perfect mobility between ranks across generations. A correlation of 1 implies that ranks do not change from generation to generation. The correlation that a researcher calculates for a real society places that society on the continuum from perfect mobility to complete rigidity.

In principle, one could use an intergenerational income correlation to measure income mobility as well as occupational mobility, but in practice researchers (usually economists) typically measure income mobility slightly differently. They look at the strength (persistence) of the relationship between parents' and children's income in percentage terms;

that is, they ask how much (what percentage) of the income difference between families in one generation persists into the next generation. This estimate is called the *intergenerational elasticity*. If the elasticity is 0.4, for example, they would conclude that a 10 percent difference in parents' income would lead to a 4 percent difference in offspring's incomes. The advantage of using the intergenerational elasticity, from the researcher's point of view, is that it can capture the amplifying effects on mobility of rising income inequality, or the dampening effects of falling income inequality (the formula for the intergenerational correlation discards this useful information). On the low extreme, an elasticity of 0 describes a society in which family economic background is not at all related to adult income, whereas an elasticity of 1 describes a society in which each person ends up in exactly the same economic position as her or his parents (just like the correlation). But unlike the correlation, the elasticity is unbounded, so one could, in principle, discover that two people who started life in families 10 percent apart ended up 15 percent apart (if the elasticity was 1.5). Mobility is the complement of the elasticity—a low intergenerational elasticity translates to a high mobility rate, and a high elasticity translates to a low mobility rate.

### Social Mobility in the Contemporary United States

Having defined our terms and introduced some of the analytical distinctions that researchers use, we turn now to the heart of the matter: how much mobility Americans have experienced from their youth till now. We discuss occupational mobility first, and then turn to income and wealth mobility.

#### Intergenerational Occupational Mobility

One way to assess occupational mobility in the United States is to categorize occupations

into a few classes and then measure the extent of class immobility, downward mobility, and upward mobility between generations. Using this technique, we analyzed nationally representative data on men and women born after 1950.<sup>7</sup> We distinguished six general occupational categories in descending order: upper professional or manager, lower professional or clerical, self-employed, technical or skilled trade, farm, and unskilled and service workers.<sup>8</sup> Among men, 32 percent were immobile (their occupation was in the same category as their father's), 37 percent were upwardly mobile, and 32 percent were downwardly mobile. Fifteen percent of the mobility was driven by structural change in the economy, or economic growth—more professional jobs and fewer farm jobs were available to sons than to their fathers; that also accounts for why upward mobility was more common than downward mobility. Women's mobility patterns reflect the gender segregation of the labor force, as well as opportunity and growth. Among women, 27 percent were immobile, 46 percent were upwardly mobile, and 28 percent were downwardly mobile. Most Americans regard sales and clerical jobs as better than most blue-collar jobs, so the millions of blue-collar men's daughters who work in stores and offices are upwardly mobile (just not very much). That particular type of short-range upward mobility accounts for the fact that more American women than men are upwardly mobile.

Table 1 shows the data for men from which the above estimates were generated. It shows the outflow of sons from each class background category to current occupational categories (in percentages). The bold diagonal entries show the percentage of men from each class background who stay where they began; this "stickiness" is greatest for the most and least advantaged class background

**Table 1. Intergenerational Occupational Mobility of Men Born between 1950 and 1979**

Percent

Origin: father's occupation	Destination: son's occupation						Total
	Upper professional	Lower professional and clerical	Self-employed	Technical and skilled	Farm sector	Unskilled and service	
Upper professional	<b>42</b>	24	7	12	0	15	100
Lower professional and clerical	29	<b>27</b>	7	17	0	20	100
Self-employed	29	18	<b>16</b>	19	0	18	100
Technical and skilled	17	19	6	<b>30</b>	1	26	100
Farm sector	14	11	8	17	<b>13</b>	37	100
Unskilled and service	16	17	6	22	1	<b>38</b>	100

Source: General Social Surveys, 1988–2004.

categories. If we consider the column percentages instead (that is, the share in each class from each background category [data not shown]), it is striking that the proportion of immobile incumbents is almost always higher than the proportion drawn from any other class category. The most extreme example is that 66 percent of men in the farm class came from a farm background.

Another way to assess occupational persistence is to examine intergenerational occupational correlations. As noted, these correlations differ depending on which characteristic of occupations is the focus of research. For example, the intergenerational correlation of the prestige of fathers' and sons' occupations is lower than the correlation of the education level associated with their occupations.<sup>9</sup> One of the most commonly used scales for measuring occupations is the socioeconomic status index (SEI), which provides a rank for each occupation. Average intergenerational father-son correlations in the SEI and similar indexes are in the neighborhood of 0.35 to 0.45, implying that some 12 to 21 percent of the variation in sons' occupations can be accounted for by fathers' occupations.<sup>10</sup> The larger estimates are mostly from the early

1960s; the smaller ones are from the 1980s and 1990s.<sup>11</sup> For the men in table 1 we calculate the correlation to be 0.32.<sup>12</sup>

Assessing whether a given intergenerational correlation or mobility rate reflects a low or high degree of occupational mobility requires determining an appropriate reference for comparison. Complete mobility is neither plausible nor, arguably, desirable, given that some of the factors leading to the intergenerational persistence of social position, such as cognitive ability or work effort, seem acceptable—that is, fair.<sup>13</sup> Complete immobility is also implausible. In the absence of accepted definitions of what constitutes low or high mobility, one strategy is to contrast the U.S. estimates with those from a range of comparable countries. Comparisons with other industrialized countries (to which we turn later) support the prevailing idea that occupational mobility in the United States is reasonably high, as does the finding that U.S. occupational persistence does not extend past two generations.<sup>14</sup>

But one complication in analyzing occupational mobility using either SEI correlations or class mobility tables such as table 1 is that

there is no straightforward way to incorporate two parents' occupations into the intergenerational correlations or class background categories. Thus occupational mobility research is limited, for the most part, to studies of father-child (or household head-child) occupational persistence. The case of income mobility, to which we turn next, is instructive: intergenerational associations appear to be weaker when calculations do not include both parents' earnings and other sources of family income. Of course, occupational statuses do not add together the way incomes do, so we use multivariate regression to calculate the total association between family background and occupational status. For the men in table 1 we find the multiple correlation is 0.38.

### **Intergenerational Income Mobility**

The current consensus among researchers is that intergenerational persistence, or elasticity, between fathers' and sons' earnings in the United States lies at about 0.4 on the 0–1 scale described above.<sup>15</sup> The persistence between total childhood family income and adult sons' family income or personal earnings is even greater, in the range of 0.54 to 0.6.<sup>16</sup> An elasticity of 0.54 means that, for example, a 10 percent difference between two families' incomes is associated with a 5.4 percent difference in their sons' earnings. The corresponding elasticity between family income and daughters' earnings is lower, at 0.43. When analysts focus on married women, the elasticity between total childhood family income and adult daughters' total family income is 0.39. The same elasticity for married sons is 0.58. These gender-specific patterns occur because men contribute about 70 percent of family income, on average, and because there is an association between childhood family income and spouses' income.<sup>17</sup>

The conclusion that the intergenerational elasticity between father's and son's earnings in the United States is as high as 0.4 was reached only recently, and these estimates may understate the true income persistence, as more recent research has tended to raise estimates of the elasticity. Early estimates placed the father-son earnings elasticity at 0.2 or lower—indicating substantially more economic mobility than an estimate of 0.4 would imply.<sup>18</sup>

The upward trend in estimates reflects methodological improvements, probably not real-life trends. In the 1970s researchers had to estimate the size of intergenerational elasticities from one year of data about fathers and one year of data about sons. The newer, higher estimates accumulate income over five or more years for both fathers and sons.<sup>19</sup> Another improvement has been the recognition that a person's age affects his or her earnings. Calculations based on young people's earnings understate the persistence that is seen when we observe people during their top-earning years.<sup>20</sup> New, logically similar corrections are resulting in a further increase in the estimated elasticity to 0.6.<sup>21</sup> We have doubts about this higher estimate for father-son earnings persistence. The theory behind accumulating data is that each family or person has a "true" income level but minor ups and downs (and measurement errors) produce variations around the true value that lower the elasticity. In the short run, this theory is credible. Over longer and longer spans, it becomes harder to believe that there is just one true value.

Elasticities are good indicators of a society's average level of intergenerational economic persistence, but they do not provide much information about mobility patterns. Mobility matrices that give the probability of chil-

**Table 2. Intergenerational Income Mobility: Probability of Son’s Quartile Given Parent’s Quartile**

Percent

Origin: parent’s income quartile	Destination: son’s income quartile			
	First	Second	Third	Fourth
First	<b>42</b>	28	19	12
Second	26	<b>29</b>	27	19
Third	18	24	<b>29</b>	29
Fourth	15	18	25	<b>40</b>

Source: Adapted from H. Elizabeth Peters, “Patterns of Intergenerational Mobility in Income and Earnings,” *Review of Economics and Statistics* 74, no. 3 (1992): 460.

dren’s economic position conditional on fathers’ or family position provide a more detailed picture of intergenerational mobility. Similar to the pattern of occupational mobility shown in table 1, the income mobility matrix in table 2 shows that economic immobility is highest among children whose family incomes fall in the top or the bottom quartiles of the earnings distribution.<sup>22</sup> This pattern is consistent with other U.S. economic mobility matrices, which show the greatest rigidity at the extremes of the distribution.<sup>23</sup>

That overall mobility rates are higher in the middle of the income distribution does not necessarily mean that the impact of family income is weaker in the middle than it is at the top and bottom of the distribution—by definition, people at the bottom of the distribution can experience only upward mobility, and the reverse is true at the top of the distribution. People in the middle have the prospect of moving either up or down.

Besides looking at descriptive income mobility matrixes, another way that researchers can learn more about mobility patterns than the average intergenerational elasticity can provide is to calculate separate estimates for

people who start life at low, middle, and high points on the income distribution for their parents’ generation. Some evidence suggests that the effect of childhood family income on adult income is stronger at the high end of the father’s earnings distribution than at the low end.<sup>24</sup>

A different question is how the effect of family background differs along the son’s earnings distribution rather than that of the father. Such analyses suggest that father’s income is more persistent among sons with low earnings than among sons with high earnings.<sup>25</sup> This implies that opportunity for upward mobility is more equal than the opportunity for downward mobility—presumably, advantaged parents are able to protect their children from downward mobility, but children from more disadvantaged backgrounds do have a greater chance of upward mobility than the intergenerational elasticity (which, as noted, describes the average level of mobility) would suggest.

**Intergenerational Wealth Mobility**

Finally, how does wealth mobility compare to occupation and income mobility? First, there is substantial intergenerational persistence in family wealth; the correlation is in the neighborhood of 0.50.<sup>26</sup> Wealth is important because its distribution is far more unequal than the distribution of family income and because it seems to have greater effects on other aspects of family well-being, especially homeownership and investment in children’s education.<sup>27</sup>

The disparity in wealth not only persists between the generations, it mushrooms. Without a cushion of inherited wealth, emergencies hit harder; and people who have no nest egg have to let opportunities pass by. Because of a wealth deficit, African Americans are

**Table 3. Intergenerational Wealth Mobility, 1979–2000**

Percent

Origin quintile	Destination quintile					Total
	Poorest	Second	Third	Fourth	Richest	
Poorest	<b>45</b>	27	11	9	9	100
Second	24	<b>35</b>	20	14	7	100
Third	11	20	<b>35</b>	21	13	100
Fourth	7	11	23	<b>33</b>	25	100
Richest	5	6	9	25	<b>55</b>	100

Source: Lisa A. Keister, *Getting Rich: America's New Rich and How They Got That Way* (Cambridge University Press, 2005), table 2.10.

more vulnerable to shocks and less able to capitalize on breaks than whites with the same income, so the next generation will inherit less too.<sup>28</sup> The wealth gap will not close any time soon; wealthy people's assets grow at a rate that approximates that of the New York Stock Exchange.<sup>29</sup> Furthermore, inherited wealth can put families in better neighborhoods and school districts than they could afford if they had to rely exclusively on their incomes.

At the very top of the wealth distribution, innovations in computer and telecommunications technologies created new fortunes in the 1980s and 1990s and pushed new people to the top of lists like the *Fortune* 400. As interesting as the extremely high tail of the wealth distribution is, however, those 400 wealthy people are not, by definition, representative of their 300 million fellow citizens. Thus most analyses of wealth mobility focus on the wealth differentials in representative samples of American families and households.<sup>30</sup> Wealth mobility in the United States resembles occupational and income mobility in a few key respects.

A number of familiar features show up in the wealth mobility matrix in table 3. First, in each row, the main diagonal entries are the

largest, indicating the relative strength of persistence and mobility. They are somewhat higher than comparable figures for family income. Second, the richest and poorest quintiles are less mobile than the middle groups, as was true for income mobility.

### Contemporary and Past U.S. Mobility Rates

The best way to evaluate contemporary mobility is to compare it with the past. Strong evidence from several approaches shows that barriers to mobility weakened substantially for American men from the 1960s through the mid-1980s, thus increasing opportunity. Trends since that time are not yet clear, since the children born from the late 1980s onward have not yet entered the labor force. However, assuming there has been no change in mobility patterns, the rise in income inequality over the last few decades means that economic differences between families will persist for a longer time.

### Occupational Mobility

Barriers to mobility weakened substantially for American men during the 1960s; the intergenerational correlation in occupations fell from roughly 0.4 to 0.3 on the scale from 0 to 1.<sup>31</sup> These trends continued for men until the mid-1980s; the correlation declined

another 30 percent in ten years.<sup>32</sup> Data sets for women are available only from the 1970s; they show that women's and men's intergenerational occupational mobility differed because the occupational distributions differed, but that the occupational mobility rate, adjusted for differences in distribution, did not differ for men and women. Trends for women resembled those for men as well.<sup>33</sup>

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*Mobility that results from a more open opportunity structure—a decreased advantage to upper-status background—leads to both downward and upward movement.*

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One major reason for the declining correlation between fathers' and sons' occupations was the climbing share of men with college degrees—occupational opportunity for college graduates is quite high, though of course the likelihood of college graduation is itself highly dependent on class background.<sup>34</sup> State interventions on behalf of disadvantaged groups may also have contributed to the increased mobility.<sup>35</sup>

By itself, the declining effect of fathers' occupation should have increased overall occupational mobility in the United States between 1972 and 1985, but for these later years the increase in opportunity was counteracted by a slowdown in economic growth. (Conversely, the growth slowdown would have resulted in less social mobility in the United States were it not for the opposite trend in opportunity.) The combined effect of in-

creased opportunity and slower growth kept overall mobility relatively high through 1985. Some evidence suggests that the trend toward greater opportunity slowed or reversed for men born after 1970, but data limits prevent firm conclusions at this time.<sup>36</sup>

Historically, over the course of the twentieth century economic growth produced more upward than downward movement. Mobility that results from a more open opportunity structure—a decreased advantage to upper-status background—leads, however, to both downward and upward movement.<sup>37</sup> So the changes in the American mobility pattern since the early 1970s have resulted in more downward mobility, especially for the offspring of the most privileged classes, and somewhat less upward mobility. Table 4 shows our calculations of the amount and direction of men's occupational mobility; that is, the share of men upwardly mobile, downwardly mobile, or immobile by year of birth. The earliest cohort (born in the 1930s) first entered the labor force in the 1950s and reached its top earning potential around 1980; the latest cohort (born in the 1970s) first entered the labor force in the 1990s and will reach its top earning potential around 2020. Almost half of the cohort born in the 1930s was upwardly mobile; only one-fourth of that cohort was downwardly mobile. Since then, fewer men have been upwardly mobile and more have been downwardly mobile. Among men born in the 1960s and 1970s, downward mobility is almost as prevalent as upward mobility. Immobility rose across cohorts from one-fourth to one-third.

### **Income Mobility**

Less is known about change over time in intergenerational income mobility. Some research has suggested a decline in the intergenerational elasticity among recent

**Table 4. Amount and Direction of Men's Occupational Mobility, by Year of Birth**

Percent

Year of birth	Immobile	Upwardly mobile	Downwardly mobile	Total
1930–39	26	49	25	100
1940–49	28	45	27	100
1950–59	31	39	30	100
1960–69	31	35	33	100
1970–79	33	35	32	100

Source: General Social Surveys, 1988–2004.

cohorts—indicating higher mobility—but the decline is not statistically significant (that is, it might appear by chance because of insufficient data), and using alternate data generates the conflicting finding that the elasticity may have increased.<sup>38</sup> The most convincing finding is that there has been no change over the past century in intergenerational income mobility.<sup>39</sup>

Because the data for the analysis of trends over time in income mobility are limited, it is possible that trends did change but that data could not detect them. One way around that difficulty is to study change over time in how a set of family background indicators broader than father's earnings or family income may affect adult income. One such study used parent income, parent education, parent occupation, family race and ethnicity, family structure, number of siblings, and region to investigate how background affected economic outcomes over time. It found that the effect of family background on men's economic outcomes declined during the 1960s, then remained constant during the 1970s, 1980s, and 1990s. Although the effect of family background remained constant over those three decades, the economic gap between advantaged and disadvantaged men increased because economic inequality in-

creased during this period. On the other hand, the effect of family background on women's outcomes declined between the 1970s and 1990s. Coupled with the increased economic inequality, this meant that the gaps in women's outcomes remained constant over the period.<sup>40</sup>

A yet broader approach investigates the joint impact of state residence, ancestry, and family income on men's economic outcomes and finds a down-up cycle. The intergenerational correlation between social origins and adult incomes was fairly constant from 1940 until 1960, fell substantially in 1970s (indicating increased mobility), and then returned to previous levels in the 1980s and 1990s. The intergenerational elasticity, on the other hand, declined between 1940 and 1980 but increased during the 1980s and 1990s. The measures are different because the elasticity is sensitive to income inequality, which followed the same trend over time—declining from 1940 to 1980 and then rising during the next two decades. The trends in the intergenerational correlation considered together with the elasticity suggest that income mobility was not abnormally low in the 1980s. But because economic inequality increased, the consequences of a historically normal degree of mobility were greater, and a greater share of the economic differences between families could persist for a longer time.<sup>41</sup>

### U.S. Social Mobility Rates in International Comparison

Direct comparisons of intergenerational social mobility in different countries are difficult to make, because both data availability and research methodologies differ from country to country. Until recently it has been hard to compare occupational mobility in the United States with that in other countries because of differences in occupational coding,

but new research using comparable coding shows that the United States is at the median in terms of opportunity: lower than the most open nations, such as Sweden, Canada, and Norway; but higher than the more rigid nations, such as West Germany, Ireland, or Portugal.<sup>42</sup> Other research suggests that Italy, France, and Great Britain are among the other societies that now display the lowest comparative mobility rates.<sup>43</sup>

Recent research attributes these international differences in occupational mobility to two dimensions of educational inequality—the share of adults who attend college and equality of educational opportunity (the strength of the effect of family background on educational attainment).<sup>44</sup> Opportunity is much greater among college-educated adults of different class backgrounds than it is among adults with less education. The United States has one of the highest levels of college attendance, but also a relatively low level of equality in overall educational opportunity.

Although the United States occupies a middle ground in international comparisons of occupational mobility, its ranking in terms of income mobility is lower. Both the United States and Great Britain have significantly less economic mobility than Canada, Finland, Sweden, Norway, and possibly Germany; and the United States may be a less economically mobile society than Great Britain.<sup>45</sup> Much of the higher intergenerational elasticity in the United States is due to greater income immobility at the top and bottom of the earnings distribution; the mobility of middle earners looks more similar to that in the other countries.<sup>46</sup>

Two explanations for these international differences in income mobility appear particularly compelling. First, it seems plausible that

high income inequality at a given time could cause a high intergenerational persistence of economic status. The United States and Great Britain have high income inequality coupled with low income mobility, whereas Scandinavian countries display the opposite pattern. Canada, however, casts doubt on this explanation, because it has relatively high income inequality coupled with high income mobility.

Second, given the limited ability of low-income parents to invest in their children's education, it is possible that progressive public policies toward education financing could explain why some countries have higher rates of economic mobility. Research shows that differences in education financing alone do not explain mobility differences between countries, but education financing is an important part of the explanation, together with other factors that differ between countries, such as the earnings return to education (how much another year of education increases one's earnings) and the heritability (either genetic or environmental) of income-predictive traits.<sup>47</sup>

Higher economic returns to education and lower levels of public financing of education decrease intergenerational mobility because when income depends on education, children from low-income families need to go to college to be upwardly mobile. But with less public financing of education, fewer low-income children can go to college. Both factors also increase income inequality at a given time, because lower public financing of education lowers equality of educational opportunity, while higher returns to education increase the earnings gap between more and less educated people. These patterns may explain why most countries either have low income inequality and high income mobility or high income inequality and low income mo-

bility. The economic returns to education are higher in the United States than they are in other countries, which may explain the stronger intergenerational income persistence. The role of heritability also implies that differing degrees of assortative marriage in a country—differing rates of couples from similar economic backgrounds marrying—will affect intergenerational mobility. Marital sorting increases intergenerational inequality.<sup>48</sup>

## **Consequences and Policy Discussion**

The research literature—and by necessity our review of it—focuses on the way the economy affects mobility. To us, though, that leaves unexplored the most profound changes affecting families and their potential to promote or hinder their children's prospects: the way family structure itself affects both income and occupational mobility. Sophisticated mobility studies came of age in the era when most people grew up in a relatively stable family structure, anchored by the earnings of a paternal breadwinner. Tying the circumstances of birth to the income of the family breadwinner greatly simplifies the task of quantifying social mobility. And as long as that was an appropriate simplification, researchers made significant progress.

But changes in family structure since the 1970s have contributed to growing economic inequality. Two-earner families have significantly higher standards of living than single-parent families.<sup>49</sup> At least part of the connection between parents' incomes and the success of their adult children is presumably due to the disrupting effects of family breakup. To be sure, researchers have considered family structure in important papers and books over the past forty years.<sup>50</sup> But so far

they have not been able to take fully into account what they know about family structure when they measure social origins. This gap in the research reduces our confidence in current estimates of social mobility. In particular, it appears that a father's absence from his family can reduce the correlation between his occupation and the success of his children. He is more able to pass on the advantages of his accomplishments if he lives with his family.<sup>51</sup> Until this issue gets sorted out, it will be hard to say what family policy is most appropriate for promoting social mobility.

What we can say is that greater opportunity and increased growth promoted social mobility during the 1960s and 1970s. The importance of socioeconomic background for adult success declined during those decades, while economic growth further boosted all job seekers and earners. Research has tied the declining importance of socioeconomic background to better educational opportunities and equal opportunity legislation and its enforcement.<sup>52</sup> Each seems to be a potential tool for leveling differences in the American opportunity structure. Institutions need to compensate for the ways that family differences lead to differences in achievement—a point made by James Coleman twenty years ago.<sup>53</sup> Educational opportunity promotes social mobility not only by distributing human capital in many ways that are independent of social origins, but also by loosening the ties between occupational and income origins and destinations among college graduates.<sup>54</sup> Establishing norms of fairness and enforcing them seems like a particularly sixties-style idealist solution. But establishing and enforcing those norms during the 1960s improved the life chances of disadvantaged people during the 1960s and 1970s and could, in principle, do so again.

## Notes

1. We will cite many specific studies in the course of this review. For overviews, consider the reviews by Gary Solon, “Cross Country Differences in Intergenerational Earnings Mobility,” *Journal of Economic Perspectives* 16, no. 3 (2002): 59–66; and Michael Hout, “How Inequality May Affect Intergenerational Mobility,” in *Social Inequality*, edited by Kathryn M. Neckerman (New York: Russell Sage Foundation, 2004), pp. 969–87.
2. David L. Featherman and Robert M. Hauser, *Opportunity and Change* (New York: Academic Press, 1978); David J. Harding and others, “The Changing Effects of Family Background on the Incomes of American Adults,” in *Unequal Chances: Family Background and Economic Success*, edited by Samuel Bowles, Herbert Gintis, and Melissa Osborne Groves (New York: Russell Sage Foundation and Princeton University Press, 2005), pp. 100–44; Michael Hout, “More Universalism, Less Structural Mobility,” *American Journal of Sociology* 93, no. 6 (1988): 1358–400.
3. The term *social mobility* can also refer to intragenerational mobility—the changes in a person’s income level or occupational status during his or her adult life course—but our focus is intergenerational.
4. Hout, “How Inequality May Affect Intergenerational Mobility” (see note 1).
5. Robert M. Hauser, “Intergenerational Economic Mobility in the United States: Measures, Differentials, and Trends,” Working Paper 98–12 (University of Wisconsin-Madison Center for Demography and Ecology, 1998); Daniel P. McMurrer and Isabel Sawhill, *Getting Ahead: Economic and Social Mobility in America* (Washington: Urban Institute Press, 1998), p. 49.
6. Otis D. Duncan. “A Socioeconomic Index for All Occupations,” in *Occupations and Social Status*, edited by Albert J. Reiss (New York: Free Press, 1961), pp. 109–38.
7. General Social Surveys, 1972–2004 (cumulative file).
8. We substituted mothers’ occupations if the father was not part of the household.
9. Robert M. Hauser and John Robert Warren, “Socioeconomic Indexes for Occupations: A Review, Update, and Critique,” *Sociological Methodology* 27 (1997): 177–298.
10. Ibid.
11. Peter M. Blau and Otis Dudley Duncan, *The American Occupational Structure* (New York: Wiley, 1967); Thomas A. DiPrete and David B. Grusky, “Structure and Trend in the Process of Stratification for American Men and Women,” *American Journal of Sociology* 1 (1990): 107–43.
12. The regression coefficient is also 0.32.
13. For example, since cognitive abilities are inherited to some degree (through genetics and environment), perfect mobility would imply no link between ability and outcome. See Harding and others, “The Changing Effects of Family Background” (see note 2); John E. Roemer, “Equal Opportunity and Intergenerational Mobility: Going Beyond Intergenerational Income Transition Matrices,” in *Generational Income Mobility in North America and Europe*, edited by Miles Corak (Cambridge University Press, 2004), pp. 48–57.
14. John Robert Warren and Robert M. Hauser, “Social Stratification across Three Generations: Evidence from the Wisconsin Longitudinal Study,” *American Sociological Review* 62, no. 4 (1997): 561–72.

15. Most of the recent estimates pinpoint the father-son earnings elasticity between 0.35 and 0.5; see Gary Solon, "Intergenerational Mobility in the Labor Market," in *Handbook of Labor Economics*, vol. 3A, edited by Orley Ashenfelter and David Card (Amsterdam: North Holland, 1999), pp. 1761–800; Gary Solon, "Intergenerational Income Mobility in the United States," *American Economic Review* 82, no. 3 (1992): 393–408; David J. Zimmerman, "Regression toward Mediocrity in Economic Stature," *American Economic Review* 82, no. 3 (1992): 409–29. These estimates exclude non-full-time workers. Estimates of persistence that include all sons with incomes are lower; see Joseph G. Altonji and Thomas A. Dunn, "Relationships between the Family Incomes and Labor Market Outcomes of Relatives," in *Research in Labor Economics*, edited by Ronald G. Ehrenberg (Greenwich, Conn.: JAI Press, 1991): 269–310; Nathan D. Grawe, "Intergenerational Mobility for Whom? The Experience of High and Low Earning Sons in International Perspective," in *Generational Income Mobility in North America and Europe*, edited by Corak, pp. 58–89 (see note 13); H. Elizabeth Peters, "Patterns of Intergenerational Mobility in Income and Earnings," *Review of Economics and Statistics* 74, no. 3 (1992): 456–66.
16. Laura Chadwick and Gary Solon, "Intergenerational Income Mobility among Daughters," *American Economic Review* 92, no. 1 (2002): 335–44; Bhaskhar Mazumder, "The Apple Falls Even Closer to the Tree than We Thought: New and Revised Estimates of the Intergenerational Inheritance of Earnings," in *Unequal Chances*, edited by Bowles, Gintis, and Groves, pp. 80–99 (see note 2); Peters, "Patterns of Intergenerational Mobility in Income and Earnings" (see note 15).
17. Chadwick and Solon, "Intergenerational Income Mobility among Daughters" (see note 16).
18. Gary Becker and Nigel Tomes, "Human Capital and the Rise and Fall of Families," *Journal of Labor Economics* 4, no 3, pt. 2: "The Family and the Distribution of Economic Rewards" (1986): S1–39.
19. Gary Solon, "Biases in the Estimation of Intergenerational Earnings Correlations," *Review of Economics and Statistics* 71, no. 1 (1989): 172–74; Solon, "Intergenerational Income Mobility in the United States," (see note 15); Zimmerman, "Regression toward Mediocrity in Economic Stature" (see note 15).
20. Steven Haider and Gary Solon, "Life Cycle Variation in the Association between Current and Lifetime Earnings," Working Paper 11943 (Cambridge, Mass.: National Bureau of Economic Research, 2006).
21. Mazumder, "The Apple Falls Even Closer to the Tree" (see note 16).
22. For example, lower overall mobility on the low end of the income distribution may be due to factors such as the lower ability of poor parents to invest in children's education, the debilitating effects of living in poor neighborhoods, or the employment effects of high rates of incarceration.
23. Grawe, "Intergenerational Mobility for Whom?" (see note 15); Markus Jantti and others, "American Exceptionalism in a New Light: A Comparison of Intergenerational Earnings Mobility in the Nordic Countries, the United Kingdom and the United States," Discussion Paper 1938 (Bonn, Germany: IZA [Institute for the Study of Labor], 2006); Mazumder, "The Apple Falls Even Closer to the Tree" (see note 16).
24. Kenneth A. Couch and Dean R. Lillard, "Non-Linear Patterns of Intergenerational Mobility in Germany and the United States," in *Generational Income Mobility in North America and Europe*, edited by Corak, pp. 190–206 (see note 13).
25. Eric R. Eide and Mark H. Showalter, "Factors Affecting the Transmission of Earnings across Generations: A Quantile Regression Approach," *Journal of Human Resources* 34, no. 2 (1999): 253–67; Grawe, "Inter-

- generational Mobility for Whom?" (see note 15). There is some conflicting evidence on this issue when a different data source is used, but this may be due to a problem with some of the data collection.
26. Casey B. Mulligan, "Galton versus the Human Capital Approach to Inheritance," *Journal of Political Economy* 107, no. 6, pt. 2: "Symposium on the Economic Analysis of Social Behavior in Honor of Gary S. Becker" (1999): S184–224.
  27. *Ibid.*
  28. Thomas M. Shapiro, *The Hidden Cost of Being African American* (Oxford University Press, 2004), pp. 60–85.
  29. Lester C. Thurow, *Generating Inequality: The Distributional Mechanisms of the Economy* (Springfield, Va.: National Technical Information Service, 1975).
  30. Dalton Conley, *Being Black, Living in the Red: Race, Wealth, and Social Policy in America* (University of California Press, 1999); Lisa A. Keister, *Getting Rich: America's New Rich and How They Got That Way* (Cambridge University Press, 2005); Melvin Oliver and Thomas M. Shapiro, *Black Wealth/White Wealth: A New Perspective on Racial Inequality* (New York: Routledge, 1995).
  31. Featherman and Hauser, *Opportunity and Change* (see note 2).
  32. DiPrete and Grusky, "Structure and Trend in the Process of Stratification" (see note 11); Hout, "More Universalism, Less Structural Mobility" (see note 2).
  33. There is limited information on trends before this time, and firm conclusions on occupational mobility after the mid-1980s are hard to come by because of data limitations. Timothy J. Biblarz, Vern L. Bengston, and Alexander Bucur, "Social Mobility across Three Generations," *Journal of Marriage and the Family* 58, no. 1 (1996): 188–200; DiPrete and Grusky, "Structure and Trend in the Process of Stratification" (see note 11); Michal Hout, "Status, Autonomy and Training in Occupational Mobility," *American Journal of Sociology* 89, no. 6 (1984): 1379–409; Hout, "More Universalism, Less Structural Mobility" (see note 2).
  34. Claude S. Fischer and others, *Inequality by Design: Cracking the Bell Curve Myth* (Princeton University Press, 1996), pp. 152–55; Hout, "Status, Autonomy and Training in Occupational Mobility" (see note 33).
  35. DiPrete and Grusky, "Structure and Trend in the Process of Stratification" (see note 11).
  36. Emily Beller and Michael Hout, "Income Inequality and Intergenerational Mobility: Change across Cohorts," unpublished Working Paper (University of California, Berkeley, 2005). The extension of the measurement of occupational class background to include mothers' as well as fathers' occupation will also change the estimated trends in mobility rates over time, because the impact of including mothers' occupation varies depending on the period (since, for example, mothers' labor force participation and parents' marital sorting by class also varies by period).
  37. Michael E. Sobel, Michael Hout, and Otis D. Duncan, "Exchange, Structure and Symmetry in Occupational Mobility," *American Journal of Sociology* 91, no. 2 (1985): 359–72.
  38. David I. Levine and Bhashkar Mazumder, "Choosing the Right Parents: Changes in the Intergenerational Transmission of Inequality between 1980 and the Early 1990s," Working Paper WP-02-08 (Federal Reserve Bank of Chicago, 2002); Susan E. Mayer and Leonard M. Lopoo, "What Do Trends in the Intergen-

erational Economic Mobility of Sons and Daughters in the United States Mean?" in *Generational Income Mobility in North America and Europe*, edited by Corak, pp. 90–121 (see note 13).

39. Jo Blandon, Paul Gregg, and Stephen Machin, "Intergenerational Mobility in Europe and North America," A Report Supported by the Sutton Trust (London: LSE Centre for Economic Performance, 2005); Chul-In Lee and Gary Solon, "Trends in Intergenerational Income Mobility," Working Paper 12007 (Cambridge, Mass.: National Bureau of Economic Research, 2006).
40. Harding and others, "The Changing Effects of Family Background" (see note 2).
41. Daniel Aaronson and Bhashkar Mazumder, "Intergenerational Economic Mobility in the United States: 1940–2000," Working Paper 05-12 (Federal Reserve Bank of Chicago, 2005).
42. Emily Beller and Michael Hout, "Welfare States and Social Mobility," *Research in Social Stratification and Mobility* (forthcoming).
43. Richard Breen and Jan O. Jonsson, "Inequality of Opportunity in Comparative Perspective: Recent Research on Educational Attainment and Social Mobility," *Annual Review of Sociology* 31 (2005): 223–43; Richard Breen, ed., *Social Mobility in Europe* (Oxford University Press, 2004), pp. 37–76.
44. Beller and Hout, "Welfare States and Social Mobility" (see note 42); Richard Breen and Ruud Luijkx, "Conclusions," in *Social Mobility in Europe*, edited by Breen, pp. 383–410; Michael Hout, "Maximally Maintained Inequality Revisited: Irish Educational Mobility in Comparative Perspective," in *Changing Ireland, 1989–2003*, edited by Maire Nic Ghiolla Phadraig and Betty Hilliard (University College Dublin Press, forthcoming).
45. Anders Bjorklund and Markus Jantti, "Intergenerational Income Mobility in Sweden Compared with the United States," *American Economic Review* 87, no. 5 (1997): 1009–18; Blandon, Gregg, and Machine, "Intergenerational Mobility in Europe and North America" (see note 39); Miles Corak, "Generational Income Mobility in North America and Europe: An Introduction," in *Generational Income Mobility in North America and Europe*, edited by Corak, pp. 1–37 (see note 13); Jantti and others, "American Exceptionalism in a New Light" (see note 23); Solon, "Cross Country Differences in Intergenerational Earnings Mobility" (see note 1).
46. Jantti and others, "American Exceptionalism in a New Light" (see note 23).
47. Casey B. Mulligan and Song Han, "Human Capital, Heterogeneity, and Estimated Degrees of Intergenerational Mobility," Working Paper W7678 (Cambridge, Mass.: National Bureau of Economic Research, 2000); Solon, "Cross Country Differences in Intergenerational Earnings Mobility" (see note 1).
48. Raquel Fernandez and Richard Rogerson, "Sorting and Long-Run Inequality," Working Paper W7508 (Cambridge, Mass.: National Bureau of Economic Research, 2000).
49. Sara McLanahan and Gary Sandefur, *Growing Up with a Single Parent: What Hurts, What Helps* (Harvard University Press, 1994).
50. Timothy J. Biblarz and Adrian E. Raftery, "Family Structure, Educational Attainment, and Socioeconomic Success: Rethinking the Pathology of Matriarchy," *American Journal of Sociology* 105, no. 3 (1999): 321–65; Beverly Duncan and Otis Dudley Duncan, "Family Stability and Occupational Success," *Social Problems* 16, no. 3 (1969): 273–85; Sara McLanahan and Larry Bumpass, "Intergenerational Consequences

of Family Disruption,” *American Journal of Sociology* 94, no. 1 (1988): 130–52; Kelly Musick and Robert D. Mare, “Family Structure, Intergenerational Mobility, and the Reproduction of Poverty: Evidence for Increasing Polarization?” *Demography* 41, no. 4 (2004): 629–48.

51. Susan E. Mayer, *What Money Can't Buy: Family Income and Children's Life Chances* (Harvard University Press, 1997).
52. DiPrete and Grusky, “Structure and Trend in the Process of Stratification” (see note 11); Hout, “More Universalism, Less Structural Mobility” (see note 2).
53. James S. Coleman, “Social Capital in the Creation of Human Capital,” *American Journal of Sociology* 94, supplement (1988): S95–120.
54. Blau and Duncan, *The American Occupational Structure*, chap. 5 (see note 11); Hout, “More Universalism, Less Structural Mobility” (see note 2).

# Intergenerational Mobility for Women and Minorities in the United States

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*Melissa S. Kearney*

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## Summary

Now that some of the historic barriers to economic success for U.S. women and minorities have begun to fall, women and blacks, in particular, are moving upward on the nation's socioeconomic ladder. Melissa Kearney reviews evidence that improved economic opportunities for these two groups make sex and race less important than they once were in determining economic status. But sex- and race-based differences in wages and income persist, and interactions between sex and class and between race and class continue to play a role in the intergenerational transmission of income status.

Kearney surveys studies and data showing that marriage remains important in determining women's economic status, even though marriage rates among women aged eighteen to thirty-four have been falling—from 73 percent in 1960 to 44 percent in 2000. Not only do spousal earnings continue to dominate family income for married women, but also women tend to marry men whose position in the income distribution resembles their fathers' position. Marriage thus facilitates the transmission of economic status from parents to daughters.

Racial wage gaps persist, says Kearney, largely because of differences in education, occupation, and skill. It also appears likely that the effects of discrimination, both current and past, continue to impede racial economic convergence. Kearney notes that the transmission of income class from parents to children among blacks differs noticeably from that among whites. Black parents and white parents pass their economic standing along to children at similar rates. But because mean income is lower among blacks than among whites, the likelihood of upward mobility in the *overall* income distribution is substantially lower among blacks. Black children are much more likely than white children to remain in the lower percentiles of the income distribution, and white children are more likely to remain in the upper reaches of the income distribution. Downward mobility from the top quartile to the bottom quartile is nearly four times as great for blacks as for whites.

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In a society with high intergenerational mobility, each new generation encounters a more-or-less level economic playing field. How well a child fares relative to others is determined far more by his or her own talent and effort than by his or her parents' income. By contrast, in a less mobile society, a parent's socioeconomic status is very influential in determining a child's relative position. The offspring of the rich are likely to be rich themselves as adults, while the adult offspring of the poor are likely to be poor. This article considers intergenerational mobility for women and minorities, in particular blacks, in the United States.<sup>1</sup>

Because of the historical importance of race and sex in determining an individual's economic outcomes, it is important to consider how the interactions between class and race and between class and sex affect intergenerational mobility. Women and minorities have historically faced barriers to economic success that have impeded the prospects for upward economic mobility (through means other than marriage, in the case of women). The intergenerational transmission of economic status has therefore likely been, and potentially still is, different among black and white families and from parents to daughters and parents to sons. To make the point, consider that if black men are disadvantaged in the labor market relative to white men, then it will be more difficult for a poor black child to achieve economic success than it will be for a white child from a similar economic background. With regard to the importance of sex, if high-paying jobs are not available to women, then it will be more difficult for a daughter than a son from a low-income family to achieve economic success through her own career advancement. These are the types of issues I consider in this article.

Recent cohorts of women and nonwhites have far better economic opportunities than their parents and grandparents had. They enter professions that were once closed to them and earn wages far more comparable to those of white men than in the past. In 2004, women held half of all positions in management, professional, and related occupations. Nearly 60 percent of women who worked did so full time and full year. Nearly 33 percent of women aged twenty-five to sixty-four had a college degree. In fact, among 2004 high school graduates, young women were more likely than young men to enroll in college, 72 percent versus 61 percent. Just thirty-five years ago, in 1970, only 41 percent of women worked full time, full year, and only 11 percent of women aged twenty-five to sixty-four had a college degree.<sup>2</sup>

The economic progress of American blacks has also been dramatic. In 1940 approximately 90 percent of black men and women lived in poverty. Black men earned, on average, 43 percent of what white men earned. Only 12 percent of blacks aged twenty-five to twenty-nine had completed high school; less than 2 percent had a college degree.<sup>3</sup> By 2000 the poverty rate among blacks had fallen to 30 percent; relative average earnings among black men had risen to 73 percent; and roughly 15 percent of blacks aged twenty-five to twenty-nine had a college degree.<sup>4</sup> In 1963 black men were 4.7 times as likely as white men to have wages in the lowest 10 percent. By 2001 this ratio had declined to 1.73.<sup>5</sup> In 1960 the share of white male workers in professional and managerial occupations was 3.5 times that of black male workers; by 2000 that ratio had fallen to 1.7. The standard of living of blacks in America today is greatly improved not only as measured against earlier generations of blacks, but also relative to whites.

But although sex and race are not nearly as important as they once were in determining economic status, sex- and race-based differences in labor market outcomes persist, and interactions between sex and class and race and class continue to be important in the intergenerational transmission of income status. Though women are marrying at lower rates and working and earning at higher rates than in the past, marriage continues to be extremely important in determining the family income of adult women. Because women tend to marry men whose economic backgrounds are similar to their own, marriage appears to facilitate the transmission of economic status from parents to daughters. And although blacks have made tremendous progress compared with earlier generations, they remain at a substantial disadvantage to whites in terms of education, labor force participation, and earnings, especially among men. Consequently, even though intergenerational correlations of income are similar between white parents and their children and black parents and their children, the likelihood of a child's moving up or down in the *overall* income distribution varies in important ways between blacks and whites. In particular, the intergenerational poverty trap appears to be much greater for blacks.

### **Income Mobility among Women**

Some statistics on key economic outcomes illustrate both the economic progress made by women and the remaining labor market gaps. These statistics make clear the relative economic position of women and the potential they have for upward mobility through their own professional attainment. They are also important for understanding and interpreting recent estimates of intergenerational income mobility for women.

### **Relative Labor Market Outcomes and Worker Characteristics**

Per hour worked, women's earnings are now about 80 percent of men's earnings.<sup>6</sup> In *Explaining the Gender Gap*, economist Claudia Goldin reports that in the U.S. farm economy of 1820, the ratio of female to male full-time earnings stood at about 0.3. By 1859, in the new manufacturing economy, that ratio had risen to about 0.5. The ratio increased again, from 0.46 to 0.56, as the clerical and sales sectors began to grow during the first three decades of the twentieth century. Between 1950 and 1980, Goldin reports, the ratio of female to male earnings for full-time, full-year employees was virtually constant at 0.60, likely because of the large influx of inexperienced women into the labor force.<sup>7</sup> But the gender gap narrowed again between 1980 and 1991, when the ratio of female to male median earnings among full-time workers climbed from 0.64 to 0.74. Women of all age groups, education levels, and experience levels shared in the gains.<sup>8</sup>

The convergence in average male and female wages notwithstanding, a gap of 20 percentage points remains. Women still systematically earn less than men. In exploring why, economists typically distinguish between gender differences in workers' characteristics, such as education, and in *returns* to characteristics. So, for example, if women are less well educated than men and if better educated workers tend to command higher wages in the labor market, then women will systematically earn less than men per hour worked. If an additional year of schooling increases the hourly wage of a male worker more than that of a female worker, then the return to education is lower for women. Differences both in characteristics and in the returns to characteristics could be due to worker preferences (such as women's

stronger preference for jobs with flexible work schedules), unobserved characteristics (such as differences in leadership potential), or discrimination. Drawing almost exclusively on research from the field of economics, I review some of the most compelling evidence on these points below.

A lower accumulation of labor market experience is one important explanation for

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women's systematically lower wages. Women have historically worked fewer years, on average, than men and have been more likely to work part time. In recent decades, as women's work experience has increased, so too have their relative wages. Francine Blau and Lawrence Kahn, using detailed labor market experience data from the Panel Study of Income Dynamics (PSID), find that changes in women's accumulated experience have been far larger than changes in women's education, and that changes in experience also explain a much larger share of the narrowing of the gender gap in wages during the 1980s.<sup>9</sup>

Women also differ from men in the *timing* of labor market experience. They are much more likely to take time away from work to care for children. Audrey Light and Manuelita Ureta find that a career interruption causes a similar initial wage drop for

women and for men and that the wages of women recover more quickly.<sup>10</sup> They also find that the wage gap narrows after women have nine years of experience, which is consistent with their earlier finding that continuously employed women perform similarly to their male counterparts. At nine years of experience, 12 percent of the wage gap is due to differences in the timing of experience, while 30 percent is due to differences in the return to experience.

Though women have made great strides in entering high-paying professions, important gender-related differences in occupations remain. Table 1 reports the occupational distribution of workers by sex, race, and ethnicity (where whites and blacks are defined as non-Hispanic), using data from the 2004 March Current Population Survey, the primary source for U.S. labor force statistics. Even today, women are much more likely to be in services and in office and administrative support than are men. Women are, however, as likely to be in occupations defined as management, business, and finance or professional and related occupations. Of course, even within occupations, men and women tend to hold different jobs.

Researchers estimate that differences in the kinds of jobs held by women and by men account for a substantial share—between 20 and 40 percent—of the male-female wage gap. Blau and Kahn find that differences in industry, occupation, and collective bargaining explain roughly 40 percent of that gap in 1988 (9 out of 22 percentage points).<sup>11</sup> Joseph Altonji and Rebecca Blank explore how much of the gender wage gap is attributable to differences in characteristics and how much to differences in returns to characteristics by estimating wage models using data in the 1996 March Current Population Survey. They find that oc-

**Table 1. Occupation Distribution, by Sex, Race, and Ethnicity, 2004**

Percent

Occupation category	All	Males			Females		
		White	Black	Hispanic	White	Black	Hispanic
Management, business, and financial	14.0	18.3	7.8	6.0	14.3	9.3	7.5
Professional and related	20.2	17.9	13.6	7.0	26.8	20.6	14.9
Service	16.5	10.3	20.6	20.0	17.3	26.8	30.7
Sales and related	11.4	12.0	8.1	7.4	12.4	10.9	12.1
Office and administrative support	14.0	5.7	9.5	6.6	23.3	22.4	20.7
Farming, Fishing, and Forestry	0.7	0.8	0.7	2.8	0.2	0.2	1.7
Construction and extraction	6.3	11.0	7.7	19.5	0.4	0.3	0.4
Installation, maintenance, and repair	3.7	7.0	5.1	6.3	0.3	0.5	0.4
Production	7.0	8.3	10.7	12.6	3.5	5.9	8.0
Transportation and material moving	6.2	8.7	16.3	12.2	1.7	3.1	3.8

Source: March 2004 Current Population Survey. Sample includes population aged sixteen to sixty-four. White and black are non-Hispanic.

occupational differences between the sexes account for roughly one-fifth of the 28 percentage point gender wage gap, and that differences in education explain virtually none of the gap. Again, most of the gap is due to differences in the returns to characteristics.<sup>12</sup> (This finding is in marked contrast to the racial gap in wages and labor force participation, which is largely explained by differences in worker characteristics.) Altonji and Blank also confirm that as minorities and women have gotten more education and experience, differences in these characteristics have become less important in explaining wage gaps.<sup>13</sup>

Historically, many of the occupational differences between men and women have reflected constraints placed on women, including explicit rules barring hiring or training women in certain occupations. Goldin also notes that women were forced to quit certain jobs upon marriage.<sup>14</sup> It is difficult to discern how much the remaining differences reflect constraints and how much they reflect women's choices. It is almost certainly true that some gender discrimination persists in

the labor market. This distinction between choice and constraint is an extremely important issue, needing more research.<sup>15</sup>

To the extent that men and women do make different choices and differ in their preferences for work outside the home or for various job characteristics, such as more or less reliance on physical labor or more flexibility to work from home, occupations will differ among men and women. Of course, an important underlying question, *why* women and men might have different occupational preferences, is largely speculative. Do these "choices" reflect societal norms or differences in the way parents and educators treat girls and boys? Or do they reflect genuine differences in taste? The economics literature offers no definitive answers to these questions.

### Estimates of Intergenerational Income Mobility for Women

Any discussion of economic mobility among women must consider the role of marriage in determining economic status and how that role has changed over time. The economic

history of women, particularly married women, in the twentieth century is far more complicated and nuanced than can be reviewed succinctly here; the interested reader is referred to Claudia Goldin's *Explaining the Gender Gap*, already noted. That said, the bare statistics, as cited by Goldin, are striking. In 1890, only 2.5 percent of married white women reported an occupation outside the home.<sup>16</sup> By 2000, 66 percent of married

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women were in the labor force, 47 percent full time. Growth has been steady since 1940, when the labor force participation rate among married women was 15 percent. In 1950 the rate was 20 percent, and it increased roughly 10 percentage points each decade, reaching 65 percent in 1990. In 1940, only 7 percent of married women with children worked full time, as against 46 percent in 2000.<sup>17</sup>

As labor force participation rates have been climbing, marriage rates have been falling. The share of women aged eighteen to thirty-four who were married fell from 73 percent in 1960 to 54 percent in 1980 to 44 percent in 2000. Yet marriage remains extremely important in determining women's economic status. The share of wives' earnings in family income was 26.6 percent in 1980, 30.7 percent in 1990, and 35.5 percent in 2003. In 2003,

among two-earner couples, 25 percent of wives earned more than their husbands.<sup>18</sup> For married women on average, however, more than 60 percent of their family income is *not* attributable to their own earnings.

These statistics illustrate that as a practical point of measurement, the role of marriage must be taken into account. A measure that considers only the correlation between parents' income and their daughters' own earned income will likely misstate the economic well-being of low-earning daughters. But a measure focusing only on the correlation between parents' income and their daughter's household's income would not distinguish between a daughter's upward mobility achieved through marriage and that gained through her own occupational success. This latter point raises a conceptual challenge.

Much of the earlier literature on intergenerational income mobility focused on the transmission of income status from parents to sons. In recent work, however, economists Laura Chadwick and Gary Solon focus on daughters.<sup>19</sup> They estimate the elasticity, or proportional responsiveness, of a daughter's income with respect to her parents' income using data from the 1992 survey of the longitudinal PSID. Improving on earlier studies of daughters, they consider separately the role of marriage and include nonworking women. Their elasticity estimates, which range from 0.35 to 0.43, suggest substantial persistence in economic status between parents and daughters. Note that a positive elasticity implies that daughters from high-income families tend to have higher family income themselves as adults. (The corresponding estimates for sons are a bit larger, ranging from 0.51 to 0.59, but these differences are not always statistically significant.)

Importantly, Chadwick and Solon also consider how “assortative mating,” or the tendency for like people to marry, affects the transmission of income status from parents to daughters. They separately estimate the correlation between parents’ income and daughter’s earnings and between parents’ income and daughter’s husband’s earnings to learn whether women marry men whose earnings and income are similar to those of their birth family.<sup>20</sup> In the sample of 365 married daughters, the mean value of the husband’s share of the couple’s combined earnings is 0.71. Strikingly, the estimated elasticity of a husband’s earnings with respect to his wife’s parents’ income is just as great as the elasticity of her own earnings to her parents’ income.<sup>21</sup> Assortative mating clearly contributes to the persistence of economic status from parents to daughters.

Earlier work by Elizabeth Peters also finds that marriage plays an important role in the persistence of income status across generations. Her study, based on data from the National Longitudinal Survey for the cohort of adults in the late 1970s and early 1980s who were teenagers during the 1960s, finds that the intergenerational correlation of income is similar for sons and daughters. But daughters have substantially more *earnings* mobility than *income* mobility, whereas for sons, intergenerational earnings and income mobility are similar. For daughters, income from a husband’s earnings reduces the amount of a daughter’s mobility measured by earnings alone.<sup>22</sup>

One conceptual issue beyond the reach of these statistics is whether economic status achieved through one’s own earnings should be valued differently from that achieved through marriage. “Marrying up” was once the primary—if not the only—means for a

woman to improve her economic status over that of her parents. Today, women are more likely to improve their status through occupation and earnings, though as the studies discussed above indicate, marriage remains a powerful means of improving economic status. Should the two avenues to advancement—marriage and occupation—be treated neutrally? Consider the following. A woman whose parents are in the lower third of the income distribution “marries well,” moving her to the upper third; or the same woman enters the medical profession and thereby moves into the upper third. Is there something different about these situations? One way to potentially address this issue is to consider how women value self-earned income relative to income derived from their husbands. For example, to what extent does income brought into the home by a woman affect her role as a decisionmaker in the household with regard to number of children or family expenditures? I merely raise these questions and make no attempt to answer them.

A related conceptual challenge is how to determine whether a woman’s earned income truly reflects her economic status. Economists generally consider nonparticipation in the labor force by men as resulting from economic constraints or barriers. For women, researchers think that labor market participation, or nonparticipation, often reflects a choice. For example, women with higher-earning husbands can more easily afford not to work outside the home. A similar issue arises in considering the *timing* of labor force participation. In a cross-section of women, lower point-in-time earnings might reflect a privilege of choice. For example, women with higher skill levels in more professional occupations can better negotiate time out of work or part-time arrangements to care for a

new baby or sick family member. This example illustrates one reason why it is important to consider life-cycle earnings, as opposed to a single snapshot of earnings, when measuring income, especially for female workers.

The important role of preferences in shaping women's labor force outcomes, as well as the transmission of these preferences from mothers to daughters, is highlighted in work by Joseph Altonji and Thomas Dunn.<sup>23</sup> Using the National Longitudinal Survey to explore gender differences in parental influence on wages, earnings, and hours, they find that father's and mother's wages have similar effects on son's and on daughter's wages, but that patterns in family influences on hours and earnings differ for sons and daughters. Strong family similarities in work hours run along gender lines and are due primarily to intergenerational and sibling correlations in preferences, rather than to labor supply responses to similarities in wages. For young men, only 15 percent of the variation in earnings is due to differences in preferences for hours. For young women, that figure is 56 percent.<sup>24</sup>

It is important to note that this discussion of marriage has not emphasized significant racial differences in the role of marriage in determining economic status. The empirical research reviewed suggests that marriage plays an important role in the intergenerational transmission of economic status for women. But black women are far less likely to have the advantage of a husband's earnings as a stable source of income. According to the U.S. Census Bureau, only 31 percent of black women aged eighteen and older were married with spouse present in 2003, as against 56 percent of white women and 52 percent of Hispanic women. In 2004 only 35 percent of black children under the age of eighteen

lived with two married parents, as against 77 percent of white children and 65 percent of Hispanic children.<sup>25</sup> With poverty nearly five times as likely among children from single-parent families, racial differences in marriage rates must certainly contribute to racial differences in economic status that are passed from one generation to the next.

### **Income Mobility among Blacks**

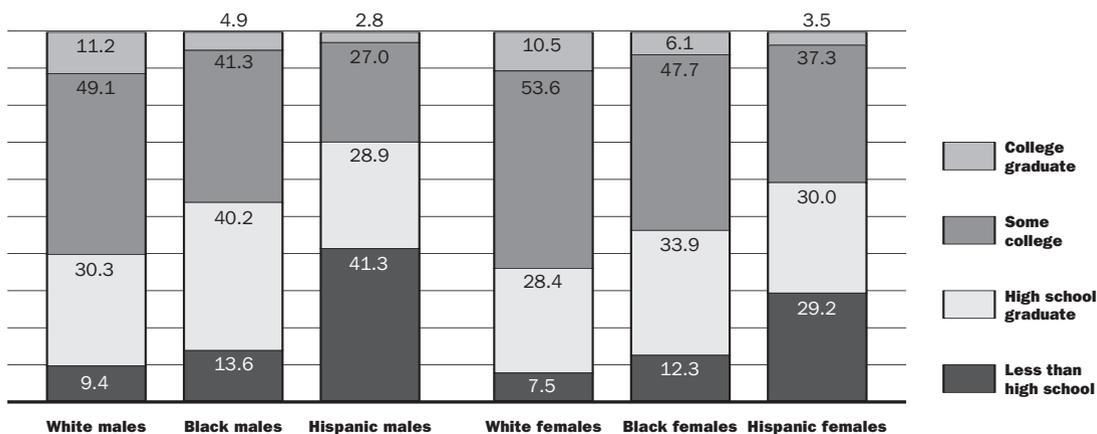
Key statistics on relative economic outcomes document both the recent economic progress of blacks and persistent racial gaps. Education and discrimination both play potentially crucial roles in impeding racial economic convergence. Continuing barriers to economic success will make it especially difficult for black children born to families in the lower ranks of the income distribution to move to the higher ranks—and for those born in the upper ranks to stay there. Recent evidence on intergenerational mobility among nonwhites finds striking differences in the mobility patterns of blacks and whites.

### **Relative Labor Market Outcomes and Worker Characteristics**

Recent decades have seen a convergence of blacks and whites on many measures of economic well-being. Between 1970 and 2000, the number of black men aged twenty-five to twenty-nine with a four-year college degree more than doubled, and the black-white ratio of median earnings for male full-time workers increased from 0.5 to 0.73.<sup>26</sup> Unlike the gender gap in earnings, however, the racial earnings gap narrowed during the 1960s and early 1970s but has since largely stagnated.<sup>27</sup> And substantial differences in labor force participation rates persist. In 1980, the rate for men aged eighteen and older was 78 percent among whites and 70 percent among blacks. In 2004 a 7 percentage point difference remained, with the rates at 74 percent

**Figure 1. Educational Distribution of Workers, 2004**

Percent



Source: See table 1.

and 67 percent. I focus on men, incidentally, not because racial differences among women are not important, but because of space constraints.

Characteristics of black and white male workers differ markedly. As shown in figure 1, workers' education varies substantially by race and ethnicity. White workers are much more likely to be college graduates and much less likely to be high school dropouts. And as shown earlier in table 1, workers' occupations also differ by race and ethnicity. White men are more than twice as likely as black men, and three times as likely as Hispanic men, to be in management, business, or finance, while black and Hispanic men are twice as likely to be in services. White women are more than 1.5 times as likely as black or Hispanic women to be in management, business, and finance, while black and Hispanic women are more than 1.5 times as likely to be in services.

Unlike the gender gap in wages, nearly all of the black-white wage gap can be explained by racial differences in labor market characteris-

tics. In their 1999 *Handbook of Labor Economics*, Joseph Altonji and Rebecca Blank, using data from the 1996 March Current Population Survey, find that the 21 percent hourly wage gap between black and white men falls to 12 percent when they take into account differences in education, experience, and region, and to 9 percent when they take into account a full set of variables, including occupation and industry. In other words, differences in characteristics account for almost 60 percent of the 1995 wage gap. When the authors take into account "ability," or skill, as measured by the Armed Forces Qualifying Test (AFQT) score, the gap disappears almost entirely, consistent with previous research.<sup>28</sup>

The above discussion has focused on racial differences in labor market characteristics, but another important and perhaps even more troubling trend is the increasing numbers of young black men who are neither in the labor force nor in school but are amassing criminal records and prison time.<sup>29</sup> While it is true that incarceration rates have been steadily rising in the population as a whole, black men are disproportionately likely to be

in prison. Census data from 2000 reveal that incarceration rates for men aged eighteen to sixty-four are seven times higher among blacks than whites—7.9 percent as against 1.07 percent.<sup>30</sup> Using unpublished data from the Bureau of Justice Statistics, sociologists Bruce Western and Becky Petit find that from 1982 to 1996 the share of men aged twenty to thirty-five in prison or jail increased from 0.8 percent to 2.1 percent among whites and from 5.5 percent to 12.2 percent among blacks. More than a third of black male high school dropouts in this age group were in prison or jail on an average day in 1996.<sup>31</sup> Although evidence is mixed, a growing body of research suggests that incarceration worsens the already disadvantaged economic position of black men through its adverse effects on wages and wage growth after their release.<sup>32</sup>

### Barriers to Upward Mobility

The evidence reviewed above leads us to the unavoidable question of *why* blacks have poorer labor market characteristics than whites, on average. Two leading explanations are educational differences and discrimination. The article by Cecilia Rouse and Lisa Barrow in this volume considers the relationship between K–12 education and social mobility in detail. Here I offer only a brief sketch of how the issue might play out with a racial dimension.

Racial differences in family background can lead directly to racial differences in the accumulation of human capital, generally thought of as educational attainment. The channels through which this might occur include, but are not limited to, differences in parental wealth, in the home environment, and in the emphasis placed on learning, along with neighborhood or peer effects and early childhood health effects. Traditional economic models assume that the optimal education for

an individual is determined by his or her ability. So if ability is evenly distributed across white and black families, then on average white and black children should receive the same amount of schooling.<sup>33</sup> But if labor market expectations are lower for black children—say, because of discrimination, either real or perceived—then blacks might rationally choose lower levels of human capital investment. Credit constraints would also lead to different investment in skills. If minority families tend to have less access to wealth or credit than white families, then minority children would also be likely to get less schooling than white children of comparable ability. Racial differences in school quality are also important to relative labor market outcomes and are the subject of much research.

Labor market discrimination occurs when workers who are equally productive in an economic sense are treated unequally (in terms of compensation or promotion) in a way that is systematically related to a characteristic such as sex, race, or ethnicity. Title VII of the Civil Rights Act of 1964 prohibits such discrimination. Nonetheless, evidence is compelling that some such racial discrimination persists.

Economic theories about labor market discrimination generally fall into two broad classes.<sup>34</sup> The first views it as a reflection of the prejudice or “taste” of some members of the majority group against members of the minority group. The second sees discrimination as being rooted in imperfect information: employers make inferences about a potential worker’s qualifications based on the average behavior of members in the worker’s “group.” As evidence of discrimination, researchers often note that differences in characteristics such as education and experience do not fully explain gaps in earnings: if two

otherwise similar people who differ only in terms of race or gender receive different wages, they argue, the gap in wages must be due to discrimination. This argument is misleading for two reasons. First, differences in labor market outcomes not explained by differences in characteristics may in part reflect discrimination, but they also reflect unobserved group differences in productivity and tastes. Second, differences in observed characteristics, such as education, might also reflect the effect of discrimination.

Given how hard it is to identify discrimination, researchers have tried to devise creative empirical tests. Audit studies, for example, compare the hiring probabilities of people who are identical in all characteristics relevant to the job at hand but who differ in race, ethnicity, or gender. Trained “auditors,” paired to match each other as closely as possible in all relevant characteristics, are sent out to interview for jobs and are given essentially identical resumes. A 1991 audit study of black and white men in Washington and Chicago, a 1990 study of Hispanic and white non-Hispanic men in San Diego and Chicago, and a 1991 study of Hispanics, blacks, and whites in Denver all found evidence consistent with discrimination against blacks and Hispanics.<sup>35</sup> But limitations of the experiments—in particular, the difficulty of identifying pairs of applications that are truly identical on all relevant dimensions—make it hard to draw firm conclusions from these studies.

An experiment by Marianne Bertrand and Sendhil Mullainathan provides compelling evidence of discrimination based on perceived race as signaled by name. The authors sent fictitious resumes to help-wanted ads in Boston and Chicago newspapers, randomly assigning names that sounded African Ameri-

can or white, such as Latoya and Tyrone or Emily and Brendan. Not only did “white” names get 50 percent more callbacks for interviews, callbacks for those names were also more responsive to resume quality.<sup>36</sup>

Disentangling the effects of past discrimination from current discrimination is another

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challenge. It is standard in economics research to distinguish between current discrimination given worker characteristics and past discrimination that may have shaped the characteristics a worker brings to the labor market. For example, discrimination in the housing market could lead to residential segregation, which could cause minority groups to live in areas with inferior schools and therefore to get a poorer education.

Shelly Lundberg and Richard Startz have developed a model to explain the persistence of racial inequality that is based on precisely this premise. They start with the observation that although many “artificial” barriers to economic success have been removed for blacks—for example, by antidiscrimination

legislation—racial inequalities persist. The experience of blacks in this country stands in contrast to the experiences of immigrant groups from Europe and Asia, whose standard of living has converged rapidly with the general population. In the view of Lundberg and Startz, the source of persistence in racial differentials is the influence of the group on the individual and the forces that create segregated communities. When the “social capital” of a community affects the accumulation of skills by individuals (as might happen, for example, to a talented black male youth growing up in an inner-city neighborhood with virtually no positive male role models), group disparities in earnings can persist indefinitely.<sup>37</sup> Racial segregation, which in large part reflects historical discrimination, is arguably an important barrier to black social and economic upward mobility.

### Estimates of Intergenerational Income Mobility for Nonwhites

The improved economic outcomes of recent generations of blacks suggest that, all else equal, we might expect to see a higher rate of intergenerational income mobility for blacks than for whites. The recent relative economic success of blacks means, for example, that there are more high-income sons than high-income fathers.<sup>38</sup> But high intergenerational income mobility among blacks would not necessarily imply that black men have higher upward mobility than white men in the *overall* income distribution. If earnings and income among blacks are systematically lower than earnings and income among whites, then a similar rate of intergenerational income transmission would imply that black sons would be lower than white sons in the overall income distribution. Thus a complete picture of social mobility requires us to consider more than a simple correlation measure of intergenerational income.

Elizabeth Peters finds that black parents and white parents pass their economic standing along to children at similar rates. The correlation between parents’ and sons’ income and earnings is the same for whites and nonwhites, as is the correlation between parents’ and daughters’ earnings.<sup>39</sup> But if, as noted, mean income is lower among blacks than among whites, and if sons and daughters “regress to the mean” income of their racial group, as is typical, then the likelihood of upward mobility in the *overall* income distribution is substantially lower among blacks and the likelihood of downward mobility, substantially greater.

Research by Thomas Hertz suggests that this is indeed the case. Hertz studied a representative sample of 6,273 white and black individuals from the Panel Study of Income Dynamics who were born between 1942 and 1972 and who were observed as both children and adults.<sup>40</sup> He found that intergenerational correlation in long-run average income in the United States is on the order of 0.4 or higher, consistent with other recent studies.

But he also found that black children are substantially more likely than white children to remain in the lower percentiles of the overall income distribution. Only 17 percent of white children born in the bottom decile of income remain there as adults, as against 42 percent of black children. Likewise, 32 percent of white children born in the bottom quartile remain there as adults, as against 63 percent of black children. And “rags to riches” experiences are much less common among blacks. Fewer than 4 percent of black children from families in the bottom quartile move to the upper quartile as adults, as against 14 percent of white children.

In contrast, among children born in the upper reaches of the income distribution,

persistence is more likely and downward mobility less likely among whites. Any child born in the top decile has a 30 percent chance of attaining the top decile as an adult and only a 3.5 percent chance of being in the bottom decile. But although white children born in the top quartile have a 45 percent chance of remaining there, black children have only a 15 percent chance. Moreover, downward mobility from the top quartile to the bottom quartile is nearly four times as great for blacks as for whites. Economically successful blacks do not appear to transmit their success to their children as effectively as white parents do. These findings do not merely reflect the fact that actual income might be greater for whites in a particular income decile or quartile than blacks. Using regression analyses, Hertz finds evidence of a black-white mobility gap of between 25 and 40 percent between the adult incomes of blacks and whites who grew up in families with identical long-run average incomes.

### **Summary Discussion**

Several important issues complicate the study of intergenerational mobility for women and minorities. For women, marriage plays an important role in the intergenerational transmission of income. Not only do spousal earnings continue to dominate family income for married women, but also women tend to marry men whose position in the income distribution resembles that of their fathers. Nevertheless, women have made great strides in terms of their ability to attain economic success through their own

earnings and occupations. Women's education, labor force participation, experience accumulation, and conditional earning (that is, earnings conditional on labor force participation) have largely come to resemble those of men.

Among blacks, too, recent cohorts have had economic opportunities and outcomes far superior to those of earlier cohorts. But blacks continue to be, on average, disadvantaged relative to whites, and the racial gap in economic outcomes persists. Successful black parents have a more difficult time transmitting their economic success to their children than do white parents. Black children born in the lowest income deciles are less likely than white children to reach the highest income deciles. Still, the picture is not all bleak. One cause for optimism is the growth of the black middle class, and particularly the black elite. Increasing numbers of blacks hold public office, own businesses, and work in professional and managerial occupations.<sup>41</sup>

Other articles in this volume discuss family background, education, health, and other such important drivers of social and economic mobility that also affect the persistent racial gap in economic outcomes. American society has come some way in improving the economic opportunities of minorities, and even more so of women. Progress remains to be made, but recent advances have enabled today's women and minorities to achieve economic mobility through reliance on their own talents and efforts.

## Notes

1. It is a limitation of this article that it almost entirely associates minority status in the United States with being black. This largely reflects the reality that the empirical economics literature has focused almost exclusively on black-white differences in economic outcomes. Hispanic and non-Hispanic differences have received far less research attention, and largely because of data limitations, even less work has been done on other minority groups, including Asian Americans and Native Americans. A separate article in this volume considers the mobility experience of immigrants.
2. These figures are based on data from the U.S. Bureau of Labor Statistics.
3. Michael Hout, "Educational Progress for African-Americans and Latinos in the United States from the 1950s to the 1990s: The Interaction of Ancestry and Class," in *Ethnicity, Social Mobility and Public Policy: Comparing the US and UK*, edited by Glenn C. Loury, Tariq Modood, and Steven M. Teles (Cambridge University Press, 2004), pp. 262–86.
4. Rebecca Blank, "An Overview of Social and Economic Trends, by Race," in *America Becoming: Racial Trends and Their Consequences*, edited by Neil J. Smelser, William J. Wilson, and Faith Mitchell (Washington: National Academy Press, 2001), vol. 1, pp. 21–40. Of course, while these figures illustrate great improvement, they also reveal a far from ideal portrait of current conditions.
5. Finis Welch, "Catching Up: Wages of Black Men," *American Economic Review* 93, no. 2 (2003): 320–25.
6. This is an adjusted figure from U.S. Bureau of Labor Statistics data. It simply compares the median earnings of female and male full-time workers. Below, I discuss differences in pay adjusted for differences between men and women in labor market characteristics.
7. Claudia Goldin, *Understanding the Gender Gap: An Economic History of American Women* (Oxford University Press, 1990).
8. June O'Neill and Solomon Polachek, "Why the Gender Gap in Wages Narrowed in the 1980s," *Journal of Labor Economics* 11, no. 1 (1993): 205–28.
9. Francine D. Blau and Lawrence M. Kahn, "Swimming Upstream: Trends in the Gender Wage Differential in the 1980s," *Journal of Labor Economics* 15, no. 1 (1997): 1–42. This investigation improves upon other analyses of the effect of experience on gender wage differentials by using a measure of actual labor market experience, which is unavailable in most data sets, rather than relying on "potential" experience (age minus education minus 6), which generally overstates experience for women.
10. Audrey Light and Manuelita Ureta, "Early-Career Work Experience and Gender Wage Differentials," *Journal of Labor Economics* 13, no.1 (1995): 121–54; Audrey Light and Manuelita Ureta, "Women's Labor Market Mobility: Evidence from the NLS," *American Economic Review* 80, no. 2 (1990): 293–97.
11. Blau and Kahn, "Swimming Upstream" (see note 9).
12. Joseph G. Altonji and Rebecca M. Blank, "Race and Gender in the Labor Market," in *Handbook of Labor Economics*, vol. 3c, edited by O. Ashenfelter and D. Card (Amsterdam: Elsevier Science, 1999), pp. 3143–259.
13. A related issue is the well-documented fact that the wages of both men and women are lower in occupations dominated by female workers. A 1995 paper by David Macpherson and Barry Hirsch investigates how much

of this relationship between wages and the proportion of female workers is due to job characteristics. The authors link CPS data on earnings and occupations from 1983 to 1993 with data on occupational job characteristics. They find that skill-related characteristics explain roughly one-quarter of the gender composition effect for women and one-half for men. See David A. Macpherson and Barry T. Hirsch, "Wages and Gender Composition: Why Do Women's Jobs Pay Less?" *Journal of Labor Economics* 13, no. 3 (1995): 426–71.

14. Goldin, *Understanding the Gender Gap* (see note 7).
15. Though explicit labor market discrimination on the basis of race is illegal, some amount of gender discrimination almost surely exists in the labor market. A 1996 paper by Claudia Goldin and Cecilia Rouse offers convincing evidence of gender discrimination in the context of hiring members of an orchestra. In the 1970s and 1980s many orchestras adopted the use of a screen or other device to hide an auditioning musician from the judges. This allows the researchers to determine whether women benefited from having their sex "hidden." It appears that they did. Among nine orchestras, the proportion of female members increased from about 0.10 in 1970 to about 0.20 in 1990. The authors conclude that the use of the screen reduced discrimination against women in orchestra hiring and can explain a large fraction of the increase in the proportion of female players. See Claudia Goldin and Cecilia Rouse, "Orchestrating Impartiality: The Impact of 'Blind' Auditions on Female Musicians," *American Economic Review* 90, no. 4 (2000): 715–41.
16. Claudia Goldin, *Understanding the Gender Gap* (see note 7).
17. Single women have always participated in the labor force in large numbers. The percentage was 58 percent in 1940, 63 percent in 1970, and 72 percent in 1990.
18. U.S. Bureau of Labor Statistics, "Women in the Labor Force: A Databook" (Department of Labor, May 2005), [www.bls.gov/cps/wlfdatabook2005.htm](http://www.bls.gov/cps/wlfdatabook2005.htm) (accessed September 2005).
19. Laura Chadwick and Gary Solon, "Intergenerational Income Mobility among Daughters," *American Economic Review* 92, no. 1 (2002): 335–44.
20. The authors note that this elasticity might be substantial, as suggested by the finding of Altonji and Dunn of a 0.26 correlation between the log earnings of a daughter's husband and her father. See Joseph G. Altonji and Thomas A. Dunn, "Relationships among the Family Incomes and Labor Market Outcomes of Relatives," in *Research in Labor Economics*, edited by Ronald G. Ehrenberg, vol. 12 (London: JAI Press, 1991), pp. 269–310. Lam and Schoeni point out that if assortative mating is strong and if the earnings of husbands are more dispersed than those of their wives, then the elasticity of a husband's earnings to those of the wife's father might be even stronger than the elasticity of a daughter's earnings to her father's. See David Lam and Robert F. Schoeni, "Effects of Family Background on Earnings and Returns to Schooling: Evidence from Brazil," *Journal of Political Economy* 101, no. 4 (1993): 710–40; David Lam and Robert F. Schoeni, "Family Ties and Labor Markets in the United States and Brazil," *Journal of Human Resources* 29, no. 4 (1994): 1235–58.
21. The empirical approach of the paper has two important advantages over the previous literature on the topic. First, it is based on data from the Panel Study of Income Dynamics, a nationally representative data set. It therefore avoids the problems associated with using a homogeneous sample—an issue in many early studies of intergenerational mobility. Second, the longitudinal nature of the data allows the authors to construct income and earnings measures from multiple years of observations. As others have pointed out, this yields a more reliable measure of income and earnings than does a single-year observation.

22. Elizabeth H. Peters, "Patterns of Intergenerational Mobility in Income and Earnings," *Review of Economics and Statistics* 74, no. 3 (1992): 456–66.
23. Joseph G. Altonji and Thomas A. Dunn, "An Intergenerational Model of Wages, Hours, and Earnings," *Journal of Human Resources* 35, no. 2 (2000): 221–58.
24. A 2003 study of intergenerational earnings mobility by Angela Fertig also looks separately at the experience of sons and daughters. She examines data on five cohorts from the PSID. The earliest cohort has parents' earnings from 1968 to 1972 and children's earnings from 1985 to 1989, and the most recent cohort has parents' earnings from 1972 to 1976 and children's earnings from 1989 to 1993. She finds that equality of opportunity for sons with respect to fathers rose over this period and equality of opportunity for sons with respect to mothers remained roughly constant, and she finds mixed evidence for daughters. See Angela R. Fertig, "Trends in Intergenerational Earnings Mobility in the U.S.," *Journal of Income Distribution* 4, no.12 (2003–04): 108–30.
25. From [www.childtrendsdatabank.org](http://www.childtrendsdatabank.org) (accessed February 2006).
26. Welch, "Catching Up" (see note 5).
27. The research of James Smith and Finis Welch finds that while the relative wages of blacks increased over the 1960s and 1970s, there is little evidence of improvements within cohort. Rather, they find that the gains are dominated by the labor-market arrival of cohorts who would do better than earlier arrivals, but not as well as subsequent cohorts. See James P. Smith and Finis Welch, "Black-White Male Wage Ratios, 1960–1970," *American Economic Review* 67, no. 3 (1977): 323–28; James P. Smith and Finis Welch, "Affirmative Action and Labor Markets," *Journal of Labor Economics* 2, no. 2 (1984): 269–301; James P. Smith and Finis Welch, "Black Economic Progress after Myrdal," *Journal of Economic Literature* 27, no. 2 (1989): 519–64.
28. The authors note that it is not appropriate to consider AFQT scores as a measure of innate ability. When they are included in a model that controls for years of schooling, as theirs does, it is perhaps most appropriate to interpret AFQT scores as a measure of how much an individual has learned, conditional upon years of schooling; note that school quality would be an important factor in that measure.
29. Sociologists Bruce Western and Becky Pettit combine labor force data from the 1982–96 March CPS surveys with survey data on prison and jail populations to construct employment-to-population ratios that are adjusted for incarceration. Their estimates suggest that standard labor force data substantially understate black-white differences in employment. Bruce Western and Becky Pettit, "Incarceration and Racial Inequality in Men's Employment," *Industrial and Labor Relations Review* 54, no. 1 (October 2000): 3–16.
30. From *Human Rights Watch Press Backgrounder* (February 22, 2002), table 2a, [www.hrw.org/backgrounder/usa/race](http://www.hrw.org/backgrounder/usa/race) (accessed February 2006). Figures calculated on the basis of U.S. Census Bureau data on state residents and incarcerated population from the 2000 census. The reported rates of incarceration per 100,000 men aged eighteen to sixty-four are 1,072 for whites, 7,923 for blacks, and 2,703 for Hispanics.
31. Western and Pettit, "Incarceration and Racial Inequality in Men's Employment" (see note 29).
32. For a review of this literature, see Bruce Western, Jeffrey R. Kling, and David F. Weiman, "The Labor Market Consequences of Incarceration," *Crime and Delinquency* 47, no. 3 (2001): 410–27. A more recent paper by Bruce Western finds large effects of having been incarcerated on both the wages (10 to 20 per-

- cent) and wage growth (30 percent) of young men. See Bruce Western, "Incarceration, Wages, and Inequality," *American Sociological Review* 67, no. 4 (2002): 526–46.
33. In their seminal papers of 1979 and 1986, Gary Becker and Nigel Tomes present an economic model of intergenerational transmission in which families bequeath human capital and financial assets to their offspring. Families choose the level of human capital investment in their children by comparing the financial return to educational investment and the return on alternative investments. Under the assumption of perfect credit markets, parental income and wealth play no role in determining child education or earnings. The model assumes that the return is increasing in ability. Hence, the level of investment in education is solely determined by child ability. Differences in child ability within a family could lead to different levels of educational investment across siblings. But, if ability is distributed randomly across families, there should be no systematic differences across families. In other words, two children of similar ability levels should receive the same level of education, even if one comes from a wealthy family and the other does not. Gary S. Becker and Nigel Tomes, "An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility," *Journal of Political Economy* 87, no. 6 (1979): 1153–89; Gary S. Becker and Nigel Tomes, "Human Capital and the Rise and Fall of Families," *Journal of Labor Economics* 4, no. 3, pt. 2 (1986): S1–39.
34. I refer the interested reader to Altonji and Blank, "Race and Gender in the Labor Market" (see note 12) for an extensive review of economic theories of discrimination.
35. Margery Turner, Michael Fix, and Raymond Struyk, *Opportunities Denied, Opportunities Diminished: Racial Discrimination in Hiring* (Washington: Urban Institute Press, 1991); Harry Cross and others, *Employer Hiring Practices: Differential Treatment of Hispanic and Anglo Job Seekers* (Washington: Urban Institute, 1990); Franklin James and Steve W. DelCastillo, *We May Be Making Progress toward Equal Access to Jobs: Evidence from Recent Audits* (University of Colorado at Denver, 1992).
36. Marianne Bertrand and Sendhil Mullainathan, "Are Emily and Brendan More Employable than Latoya and Tyrone? Evidence on Racial Discrimination in the Labor Market from a Large Randomized Experiment," *American Economic Review* 94, no. 4 (2004): 991–1013.
37. Shelly J. Lundberg and Richard Startz, "On the Persistence of Racial Inequality," *Journal of Labor Economics* 16, no. 2 (1998): 292–324.
38. Smith and Welch, "Black-White Male Wage Ratios" (see note 27); Smith and Welch, "Affirmative Action and Labor Markets" (see note 27); and Smith and Welch, "Black Economic Progress after Myrdal" (see note 27).
39. Peters, "Patterns of Intergenerational Mobility" (see note 22).
40. Thomas Hertz, "Rags, Riches, and Race: The Intergenerational Economic Mobility of Black and White Families in the United States," in *Unequal Chances: Family Background and Economic Success*, edited by Samuel Bowles, Herbert Gintis, and Melissa Osborne Groves (New York: Russell Sage and Princeton University Press, 2004), pp. 165–91.
41. See, for example, Smith and Welch, "Black Economic Progress after Myrdal" (see note 27); Thomas Boston, "Trends in Minority-Owned Businesses," in *America Becoming*, edited by Smelser, Wilson, and Mitchell, vol. 2, pp. 190–221 (see note 4).



# Making It in America: Social Mobility in the Immigrant Population

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*George J. Borjas*

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## Summary

In his survey of research on social mobility and U.S. immigration, George Borjas underscores two insights. First, most immigrants are at a sizable earnings disadvantage, relative to native-born workers. Second, the earnings of different groups of immigrants vary widely.

The children of immigrants “catch up” to native-born workers slowly. The jump in relative wages between the first and second generations is somewhere between 5 and 10 percentage points. Of particular concern is that the age-adjusted relative wage of both immigrants and second-generation workers has been falling—a trend with bleak implications for the children of immigrants.

The wide ethnic variation in the earnings of immigrants has equally important implications. National origin groups from advanced economies, such as Canada, do much better in the U.S. labor market than those from poorer countries, such as Mexico. And the initial ethnic differences tend to persist. In rough terms, about half of the difference in relative economic status persists from one generation to the next. Thus a 20 percentage point wage gap among ethnic groups in the immigrant generation implies a 10 point gap among second-generation groups and a 5 point gap among third-generation groups. Again in rough terms, Borjas attributes about half of that persistence to the ethnic environment in which children are raised.

Borjas cautions that the rate of social mobility that immigrants enjoyed over much of the twentieth century may not continue in the future. The employment sectors seeking immigrants today are unlikely to provide the same growth opportunities as did the rapidly expanding manufacturing sector a century ago. And in contrast to the many and diverse ethnic groups that made up early twentieth-century immigrants, the large ethnic groups of immigrants today may develop separate economies and social structures, in effect hindering their social mobility.

[www.futureofchildren.org](http://www.futureofchildren.org)

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The ultimate impact of immigration on the United States depends not only on the economic, social, political, and cultural experiences of the immigrants themselves, but also on how their households fare in those areas over several generations. The resurgence of large-scale immigration to the United States in recent decades has raised the foreign-born share of the population from 4.7 percent in 1970 to 12.7 percent in 2003 and is expected to drive up the population share of the second generation (those born in the United States with at least one foreign-born parent) from 10.5 percent in 2004 to nearly 14 percent by 2050. The grandchildren of current immigrants will make up an additional 9 percent of the population by mid-century.<sup>1</sup>

The traditional view of the social mobility of immigrant households across generations is vividly encapsulated by the melting pot metaphor. In that view, immigrants from an array of diverse countries blend into a homogeneous native population relatively quickly, perhaps in two generations. Although many analysts have questioned the relevance of the melting pot image to the experience of many ethnic groups in the United States, it seems to have a magnetic and intuitive appeal that often confounds its detractors.<sup>2</sup> As a result, the “assimilationist” perspective has long dominated the thinking of many observers of the immigrant experience.

Ironically, and from a purely economic perspective, it is not clear that the United States would be better off if a melting pot quickly blended the new immigrants, making them indistinguishable from native-born workers. After all, the productivity gains from immigration are maximized when the immigrant population differs most from the native pop-

ulation and immigrants have skills that the native workforce lacks—or, in the commonly used phraseology, when “immigrants do jobs that natives do not want to do.” As a result, the productivity gains from immigration would be larger if the United States were to pursue policies that hampered and delayed the assimilation of immigrants. If the melting pot bubbled away efficiently, the only way for the country to replenish the productivity gains from immigration would be to admit more and more immigrants.

Of course, this perspective is much too narrow and misses the point. Most available estimates suggest that the net productivity gains from immigration are quite small even in the first generation, when the immigrants differ most from native workers.<sup>3</sup> Moreover, the economic, social, and political consequences of delaying assimilation could be disastrous. The ethnic conflicts in many regions of the modern world, for instance, often originated centuries ago, and their consequences still fester. One does not have to be a very astute observer of the human condition to discern the value of a cohesive social fabric. Therefore, it is probably in the national interest of the United States to pursue policies that both spur substantial intergenerational progress by immigrant households and reduce the importance of ethnicity in determining how well future generations fare.

In what follows I summarize research on social mobility in the immigrant population and draw out some of the lessons implied. The evidence suggests that there is significant economic “catching up” from the first to the second generations, with the relative wage of the second generation being, on average, about 5 to 10 percent higher than that of the first. At the same time, the socioeconomic status of the immigrant generation and that

of their children are strongly correlated, as is also, though more weakly, that of their grandchildren. In rough terms, about half of the differences in relative economic status across ethnic groups in one generation persist into the next. As a result, the very large ethnic differences in economic status among today's immigrants will likely dominate American society—and discussions of American social policy—for much of the twenty-first century.

### **An Economic Perspective on Social Mobility**

From a broad perspective, social mobility in immigrant households includes the cultural adaptation that immigrants and their children make to their new environment, their adoption of social norms and attitudes that may differ widely from those in their home countries, and their accumulation of “human capital investments,” such as education, language skills, and geographic relocation, which improve their economic status in their new country. In this paper I focus exclusively on this economic aspect of social mobility—the rate at which the economic status of the immigrant household improves from one generation to the next—and thus provide only a limited picture of the intergenerational changes that immigrant households inevitably experience in the United States.

There is, however, an important link between the economic notion of social mobility and the cultural issues traditionally emphasized in the immigration debates in the United States and many other countries. To make economic gains, an immigrant will often have to acquire skills that are valued by American employers, such as learning English and adopting the norms of the American workplace, and will often have to move to economically vibrant areas far from the ethnic enclave. Each of these steps helps weaken

the link between the immigrant's foreign past and his or her American future.

Many immigrants, therefore, face an important trade-off: they may have to discard some of their native attributes, habits, and cultural characteristics and pick up new ones that enhance their chances of success in the American economy. Put differently, economic and noneconomic forms of social mobility may often complement each other: there will be more mobility of one type when there is more mobility of the other.

Research on immigrant economic performance has provided two insights that are widely accepted in the immigration debate. First, upon arrival in the United States, the typical immigrant worker suffers a sizable earnings disadvantage (relative to native-born workers), a disadvantage unlikely to disappear during his or her working life. Second, the many national origin groups that make up the first-generation population vary widely in socioeconomic status and earnings.<sup>4</sup>

Even within the boundaries provided by the narrow economic definition of social mobility, any study of intergenerational economic progress in immigrant households needs to examine two related, but distinct, phenomena. First, to what extent does the initial economic disadvantage of the immigrants narrow across generations? Put differently, do the children (or grandchildren) of immigrants “catch up” to the average economic status of native-born workers? It seems reasonable to suspect that the children of immigrants enjoy a “head start” in their earnings capacity that is not experienced by any other previous generation. After all, they are typically the first of the immigrant household to graduate from American schools, the first to benefit from having English as a native tongue, and the first to know about the

internal workings of the U.S. labor market before getting their first job.

Second, it is well known that the relation between the earnings of parents and children, regardless of whether the parents are foreign- or native-born, is driven by a phenomenon known as regression toward the mean. Even though the children of highly successful parents are themselves likely to be successful, they are not likely to be as successful as their parents. Their economic performance will probably revert downward toward the population average. Similarly, even though the children of low-skill parents are themselves likely to be low-skilled, they are unlikely to be as unskilled as their parents; again there is a reversion upward toward the population average. Regression toward the mean acts like a double-sided magnet: it pulls the economic status of the children in outlying groups toward the mean of the population, *regardless* of where the parents start out.

The explanation for this phenomenon is that parental skills and family background are not alone in influencing the transmission of skills from one generation to the next. Because many other unknown and random factors, such as luck and imperfect genetic transmission of ability, motivation, and drive, are also at work, children of parents at either tail of the wage distribution will probably lie closer to the middle of that distribution as adults.

The concept of regression toward the mean is crucial in understanding social mobility in the immigrant population. Some ethnic groups who enter the United States do very well in the labor market, while other groups perform poorly. Part of these ethnic differences will likely be passed on to their offspring. The melting pot metaphor argues that these differences disappear relatively quickly,

leaving ethnic groups indistinguishable. In terms of the economic status of different ethnic groups, the melting pot suggests that regression toward the mean is an important phenomenon. Economic differences among ethnic groups in the first generation are fleeting, and an immigrant's ethnic background will have little effect on his descendants' economic well-being.<sup>5</sup>

### **The Economic Performance of the Children of Immigrants**

It is widely perceived that, on average, the children of immigrants far outperform their parents in economic terms. This perception originated in the early studies of Barry Chiswick and Geoffrey Carliner that compared the earnings of various generations of U.S. workers at a particular time, such as in the 1970 decennial census.<sup>6</sup> Table 1 summarizes the evidence for three such cross-sections: the 1940 census, the 1970 census, and the pooled 1994–2003 Current Population Surveys (which, for convenience, I will refer to as the 2000 cross-section).<sup>7</sup>

Each of these cross-section data files allows the precise identification of two generations of Americans: the immigrant generation (those born abroad) and the second generation (those born in the United States with at least one parent born abroad). It is impossible to determine precisely the generation of the rest of the sample (those born in the United States with American-born parents), but they are typically referred to as “third-generation” Americans—an extremely broad group ranging from grandchildren of immigrants to descendants of the Mayflower pilgrims.

For each of the available data cross-sections, table 1 reports the (age-adjusted) percentage wage differential between the average worker in the first and third generations, as well as

**Table 1. Wage Differentials across Generations**

Log weekly wage differential (relative to 3rd generation)	1940	1970	2000
<b>Age-adjusted</b>			
Male			
1st generation	0.058	0.014	-0.197
2nd generation	0.178	0.146	0.063
Female			
1st generation	-0.007	0.068	-0.102
2nd generation	0.115	0.101	0.088
<b>Age- and education-adjusted</b>			
Male			
1st generation	0.107	0.028	-0.106
2nd generation	0.189	0.124	0.029
Female			
1st generation	0.106	0.101	-0.034
2nd generation	0.164	0.101	0.057

Source: Author's calculations using data from the 1940 and 1970 censuses and the pooled 1995–2003 March Current Population Surveys. The log wage differential, when multiplied by 100, can be roughly interpreted as the percentage wage differential between the groups.

between the average worker in the second and third generations.<sup>8</sup> In every cross-section, the second generation earns more than both the first and the third generation. In 1970, for example, second-generation working men earned about 14.6 percent more than men in the third generation, while the first generation earned 1.4 percent more. Even though trends in the relative wage of working women are potentially influenced by selection biases associated with rising female labor force participation, the intergenerational pattern for women is exactly the same. The typical second-generation working woman earned 10.1 percent more than women in the third generation, while the typical immigrant working woman earned about 6.8 percent more. In 1940 second-generation working men earned 17.8 percent more than the baseline third generation, while immigrants earned 5.8 percent more. In 2000 second-generation working men earned 6.3 percent more than the baseline third generation, while immigrants earned 19.7 percent less.

The wage superiority of the second generation workforce in each cross-section snapshot seems to imply—and has been interpreted as implying—that second-generation Americans earn more than both their parents and their children. A common explanation is that the children of immigrants are “hungry” and have the drive and ambition to ensure economic success in the U.S. labor market—and that this hunger is lost once the immigrant household becomes fully Americanized, by the third generation. If this interpretation were correct, concern over the relatively low skill level of the immigrants of the past three decades would be misplaced. If historical patterns were to hold in the future, the children of these immigrants would outperform not only their parents but the rest of the workforce in only a few decades.

It turns out, however, that the evidence summarized in table 1 does not necessarily justify this inference. After all, the family ties among the three generations identifiable in any one

cross-section of data are very tenuous. It is *biologically impossible* for most second-generation workers in a particular cross-section to be the direct descendants of the immigrants in the same cross-section. For instance, working-age immigrants in the 2000 cross-section (most of whom arrived in the 1980s and 1990s) typically cannot have American-born children who are also of

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*In short, the fact that second-generation workers earn more than other workers at a particular time does not necessarily imply that they earn more than either their parents or their children.*

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working age. Second-generation Americans of working age can be the descendants only of immigrants who have been in the country for at least two or three decades. Put differently, most of the second-generation workers in the 2000 cross-section are unlikely to be the children of the immigrant workers in the same cross-section. Because of skill differences across immigrant cohorts—and because some of these differences could easily be transmitted to their children—the wage gap between first- and second-generation workers in a cross-section does not correctly portray intergenerational social mobility.

In short, the fact that second-generation workers earn more than other workers at a particular time does not necessarily imply that they earn more than either their parents or their children. To calculate the improvement in economic status between the first

and second generations, one must link the economic performance of parents and children, rather than compare the economic performance of workers in different generations at a particular time.

Making the correct intergenerational comparison requires tracking the immigrant population over time.<sup>9</sup> For instance, the 1970 census provides information on the economic performance of immigrants in 1970, many of whom are the parents of the second-generation workers in the 2000 cross-section. Similarly, the 1940 census provides information on the economic performance of immigrants in 1940, who are, in turn, probably the parents of the second-generation workers in the 1970 census. Only by comparing the economic performance of immigrant workers in 1940 with that of second-generation workers in 1970—or that of immigrant workers in 1970 with that of the second generation in 2000—can one correctly determine the economic progress made by the children of immigrants.

To illustrate, consider again the wage information summarized in table 1. If one (incorrectly) used only the information provided by the 2000 cross-section, we would conclude that because second-generation workers earn 6.3 percent more than the baseline third generation and because first-generation workers earn 19.7 percent less than the baseline, second-generation workers earn 26.0 percent more than first-generation workers. A correct calculation, however, reveals much less intergenerational improvement. After all, the typical immigrant in 1970 earned 1.4 percent more than the typical third-generation worker. And the typical second-generation worker in 2000 (who is presumably the descendant of the immigrants in 1970) earns 6.3 percent more than the baseline. In short, the true in-

tergenerational growth in relative wages was only on the order of 5 percent—rather than the 26 percent implied by the intergenerational wage differences observed in 2000.

Similarly, the 1970 census seems to imply that the children of immigrants earn 13.2 percent more than their parents (14.6 percent minus 1.4 percent). But the economic status of the parents of these second-generation workers can be observed only in the 1940 census, where the immigrants had a relative wage advantage of 5.8 percent. The intergenerational wage improvement between 1940 and 1970 is then on the order of 8.8 percent (14.6 percent minus 5.8 percent). Again, immigrant households saw *less* wage growth across generations than would be implied by looking at the intergenerational wage differentials in a single cross-section. Still, however, the 5 to 10 percent intergenerational wage growth between the first and second generations is a substantial improvement in economic opportunity.

The bottom panel of the table reports the wage differences among the generations after the data are also adjusted for differences in workers' educational attainment. For both working men and women, much of the intergenerational progress in the "raw" data disappears. Put differently, much of the progress between the first and second generations (which leads to the 5 to 10 percent wage increase in the second generation) can be explained by differences in schooling between these two generations, as the native-born children of immigrants go through the American education system.

Finally, the evidence summarized in table 1 reveals a second potentially important pattern. In particular, note that the age-adjusted relative wage of immigrants has declined

steadily since 1940. In 1940, the typical immigrant working man earned 5.8 percent more than workers in the third generation; by 1970, this economic advantage had fallen to 1.4 percent; by 2000, it had become a sizable *disadvantage* of 19.7 percent. Although this decline in the relative economic status of the immigrant workforce has been well documented, the data in table 1 also show a concurrent (and much less studied) decline in the relative wage of the second-generation workforce. In 1940, the typical second-generation working man earned 17.8 percent more than workers in the baseline third generation; by 1970, the wage advantage had fallen to 14.6 percent, and by 2000, to 6.3 percent. In short, the relative economic status of second-generation workers has been falling over time—just as that of the foreign-born workforce has been.

Put differently, the second-generation workers in the 2000 cross-section (whose parents made up the immigrant workforce in 1970) have a lower economic status than the second-generation workers in the 1970 cross-section (whose parents made up the immigrant workforce in 1940). If these historical trends continue for the next few decades, the forecast for the economic performance of the children of today's wave of immigrants could be bleak. Today's immigrants have a substantial wage disadvantage of 19.7 percent. If the intergenerational jump in relative earnings between the first and second generation is between 5 and 10 percent, their children will experience a 10 to 15 percent wage *disadvantage* around 2030. This remarkable turnaround in the economic status of the second generation highlights an important historical insight: the long-term trend in the relative economic performance of the second-generation workforce tracks that of the first generation, but with a generational lag.<sup>10</sup>

**Table 2. Age-Adjusted Relative Wage (to the Third Generation) for Selected Ethnic Groups, 1970–2000**

Country of origin	Relative wage of immigrants in 1970	Relative wage of second generation in 2000
Canada	0.185	0.168
Cuba	-0.202	0.044
Dominican Republic	-0.370	-0.189
El Salvador	0.066	-0.043
France	0.198	0.059
Germany	0.249	0.195
Greece	-0.019	0.139
Haiti	-0.217	-0.106
India	0.308	0.271
Ireland	0.243	0.170
Italy	0.029	0.131
Jamaica	-0.228	0.012
Mexico	-0.316	-0.147
Nicaragua	-0.184	-0.043
Norway	0.278	-0.032
Philippines	-0.119	0.014
Poland	0.119	0.269
Portugal	-0.234	0.042
Spain	-0.074	0.141
Switzerland	0.252	0.422
United Kingdom	0.033	0.239

Source: Author's calculations from the 1970 census and the pooled 1995–2003 March Current Population Surveys. The log wage differential, when multiplied by 100, can be roughly interpreted as the percentage wage differential between the groups.

## The Persistence of Ethnic Wage Differences

As noted, ethnic groups vary widely in socioeconomic status both in the first generation and in the second. Some national origin groups, typically those from advanced economies, do quite well in the U.S. labor market, while others, typically those from poorer countries, fare much worse. Table 2 shows some of this variation for selected groups.<sup>11</sup> In 1970, for instance, immigrants from Canada earned 18.5 percent more than

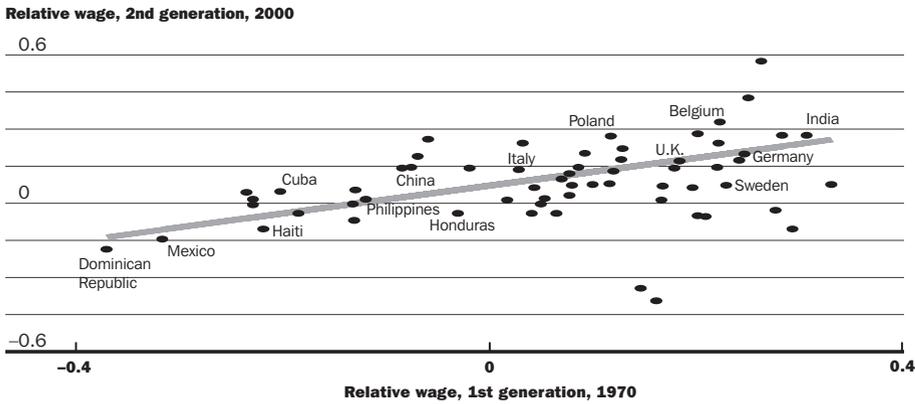
the typical worker in the baseline third generation, while immigrants from Mexico earned 31.6 percent less. By 2000, second-generation workers from Canada earned 16.8 percent more than the typical third-generation worker, while second-generation workers from Mexico earned 14.7 percent less.

To determine the extent to which ethnic wage differences among immigrants persist into the second generation, some studies estimate statistical models that relate the relative wage of a second-generation national origin group to that of its first-generation counterpart.<sup>12</sup> These analyses account for the fact that first- and second-generation workers in a single cross-section of data have little biological connection by linking the relative earnings of second-generation workers at a particular time (for example, the 2000 cross-section) to the earnings of first-generation workers a few decades past (for example, the 1970 census).

Before summarizing the evidence, I will illustrate the nature of the exercise. Figure 1 shows the intergenerational link for male workers from many national origin groups between 1970 and 2000.<sup>13</sup> The horizontal axis gives the age-adjusted relative wage of men in the immigrant generation, using data from the 1970 census. The vertical axis gives the age-adjusted relative wage of men in the second generation, using data from the 2000 cross-section. The correlation between the average wages of workers in the two generations is obviously strong and positive; the groups that fared well economically in the first generation also did well in the second.

The upward-sloping line in figure 1 summarizes the statistical relationship that links the relative wages of particular national origin groups across the two generations. The slope of this line, often called the intergenerational

**Figure 1. Social Mobility between 1st Generation (1970) and 2nd Generation (2000)**



Source: Author's calculations from the 1970 census and the pooled 1995–2003 March Current Population Surveys. The relative wage gives the age-adjusted log weekly wage differential between a particular group and the typical third-generation worker in the labor market at that point in time. The log wage differential, when multiplied by 100, can be roughly interpreted as the percentage wage differential between the groups.

correlation in relative wages, measures the extent of regression toward the mean across generations. A relatively flat line would show little connection between the average skills of the ethnic groups in the second generation and those of the immigrant groups. Put differently, all second-generation groups would have relatively similar wages, regardless of the economic performance of their parents. The intergenerational correlation would be near zero, and the regression toward the mean would be complete. A relatively steep line, by contrast, would show a close link between relative wages in the first and second generations. If the intergenerational correlation were equal to one, for example, the relative status of the ethnic groups in the two generations would be identical and the line would have a 45 degree slope. In an extreme case, if the typical worker in a particular immigrant group earns 30 percent more than a third-generation worker, the typical second-generation descendant of that group would also earn 30 percent more than the third generation. There is no regression toward the mean because the ethnic differences remain the same from generation to generation.

Table 3 reports the estimated intergenerational correlations over both 1940–70 and 1970–2000. Among working men, the correlation (row 2) is 0.511 for 1940–70 and 0.560 for 1970–2000. Among working women (row 3), the correlations are smaller: 0.242 for 1940–70 and 0.280 for 1970–2000. As noted, however, the intergenerational changes in the relative wage of women may reflect the dramatic increase in the rate of female labor force participation over these six decades.

The bottom panel of table 3 reports the estimated intergenerational correlations after earnings are also adjusted for differences in schooling. This adjustment weakens the correlations: the correlation in the sample of working men, for example, drops by nearly half to 0.287 during 1940–70 and to 0.245 during 1970–2000. In short, a primary reason why ethnic wage differences persist across generations is the persistence of ethnic differences in schooling.

The estimated correlations for working men reported in the top panel of the table suggest two important conclusions. First, the inter-

**Table 3. Intergenerational Correlation in Relative Wages**

	1940–70	1970–2000
<b>Age-adjusted</b>		
All workers	0.416 (0.113)	0.434 (0.089)
Male	0.511 (0.127)	0.560 (0.066)
Female	0.242 (0.091)	0.280 (0.123)
<b>Age- and education-adjusted</b>		
All workers	0.202 (0.088)	0.128 (0.022)
Male	0.287 (0.101)	0.245 (0.034)
Female	0.061 (0.070)	-0.007 (0.042)

Sources: Author's calculations from the 1970 census and the pooled 1995–2003 March Current Population Surveys. Standard errors are reported in parentheses. The regressions estimated for 1940–70 include thirty national origin groups, while those for 1970–2000 include sixty-one groups. The regressions are weighted by the size of the ethnic group in the second generation.

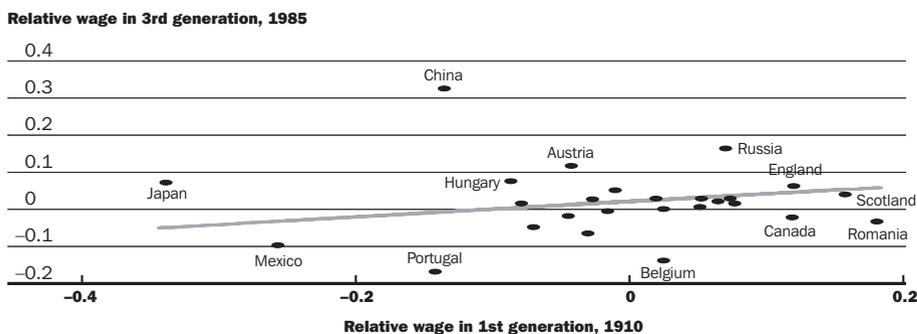
generational correlation between the skills of the first and second generations is about halfway between zero and one. A correlation of 0.5 implies that half of the wage difference between any two national origin groups in the first generation persists into the second generation. If the average wage of two ethnic groups is 30 percentage points apart in the first generation, it is expected to be about 15 percentage points apart in the second. There is some social mobility, therefore, but ethnicity continues to have a large effect on labor market outcomes in the second generation.

Second, the estimates of the intergenerational correlation between 1940 and 2000 are remarkably stable. The process linking the economic performance of first- and second-generation ethnic groups was quite similar

over those six decades, despite major changes in economic and social conditions, as well as in immigration policy.<sup>14</sup>

It is also important to determine whether the ethnic wage differences that remain in the second generation are transmitted to the immigrants' grandchildren. To establish how long a person's ethnic background matters for wage outcomes, one can track the economic performance of the grandchildren of the immigrants who entered the United States during the "first" Great Migration, at the beginning of the twentieth century.<sup>15</sup> One would use data from the 1910 census to get information on the skill level of the national origin groups that made up the first Great Migration and use the General Social Surveys to get information on the sample of American-born workers (around 1985) with at least one grandparent born outside the United States.

Figure 2 summarizes some of the data and shows clear differences in relative wages among third-generation ethnic groups—although the differences are far smaller than those in the first generation. Nevertheless, even after three-quarters of a century, a positive correlation remains between the relative wage of the original immigrant groups and that of the corresponding third-generation ethnic groups. The slope of the line linking the relative wage of the first and the third generations implies an intergenerational correlation of 0.22, meaning that 22 percent of the wage gap between any two groups in the immigrant generation persisted into the third. Recall that roughly half of the wage gap between any two immigrant groups disappears between the first and second generations. It seems that about half of what remains in the second generation disappears between the second and the third.<sup>16</sup>

**Figure 2. Social Mobility between 1st Generation (1910) and 3rd Generation (1985)**

Source: George J. Borjas, "Long-Run Convergence of Ethnic Skills Differentials: The Children and Grandchildren of the Great Migration," *Industrial and Labor Relations Review* 47, no. 4 (July 1994): 561–62. The relative wage gives the log wage differential between a particular group and the typical worker in the labor market at that point in time. The log wage differential, when multiplied by 100, can be roughly interpreted as the percentage wage differential between the groups.

The historical record suggests one broad generalization. The “half-life” of ethnic skill differences is roughly one generation: about half of the ethnic differences in relative wages disappears in *each* generation. Put differently, a 20 percentage point wage gap among ethnic groups in the immigrant generation implies a 10 point gap among second-generation groups and a 5 point gap among third-generation groups.

### Ethnic Capital and Social Mobility

The finding that the intergenerational correlation in the relative wage of ethnic groups is around 0.5 raises an important puzzle. Many studies conclude that about 20 to 40 percent of the skill differences among parents are typically transmitted to their children.<sup>17</sup> Ethnic wage differences thus seem more persistent than one would expect simply from the intergenerational correlation between parents and children.

To solve this puzzle, some have argued that a person’s ethnic background—in *and of itself*—may affect social mobility.<sup>18</sup> In particular, the skills of the next generation depend not only on what parents do, but also on “ethnic capital,” or the characteristics of the eth-

nic environment where the children are raised. A highly advantaged ethnic environment—one where most parents are college graduates, for example—imbues children with valuable characteristics that enhance their socioeconomic achievement later in life. In contrast, disadvantaged ethnic environments—those where most parents may be high school dropouts or welfare recipients—imbue children with characteristics that may impede future socioeconomic achievement. In effect, the ethnic environment is like glue in the process of social mobility, ensuring that the average characteristics of the ethnic group do not change much from generation to generation.

To illustrate the link between ethnic capital and social mobility, consider the children of hypothetical Mexican and Korean families. Suppose the parents in these two families have a similar socioeconomic status. Even though the parents are, say, high school graduates, the child in the Mexican household will likely grow up in an ethnic enclave where many of the neighbors are high school dropouts and where few of the child’s friends go on to college. In contrast, the child in the Korean household will likely grow up in an

area where many neighbors have some college education and where many of the child's friends will go on to college.

If ethnic capital matters—in other words, if exposure to different types of ethnic influences has an effect on social and economic development—the two children in this hypothetical example are on different socioeconomic paths that will lead to very different life experiences. The Mexican child will be continually exposed to cultural and economic contacts common among low-educated workers, while the Korean child will be exposed to contacts that are common among college graduates. The ethnic capital hypothesis argues that continual exposure to a particular type of ethnic capital tends to “pull” the child toward the average or norm in that ethnic group. In other words, ethnic capital is like a magnet—attracting the child toward the socioeconomic outcomes experienced by the typical person in the particular ethnic group. In effect, ethnic capital increases the persistence of ethnic wage differences across generations.

Many studies have shown that ethnicity seems to have an independent effect—above and beyond that of parental socioeconomic status—on the outcomes of children in particular ethnic groups and that much of that effect can be directly linked to the importance of ethnic enclaves, which tend to cluster workers with relatively similar socioeconomic characteristics into a very compact geographic area.<sup>19</sup> In rough terms, about half of the persistence in the relative wage of different ethnic groups seems to be attributable to ethnic capital.

It is worth emphasizing that the mix of factors that makes ethnic capital socially important may differ significantly across ethnic

groups and across ethnic enclaves. A recent study of ethnic neighborhoods in Los Angeles found that local social organizations and businesses in Chinatown and Koreatown are dominated by the respective ethnic groups, while those in Pico-Union (a Mexican–Central American immigrant neighborhood) tend to be much more mixed.<sup>20</sup> The Chinese and Korean owners of small businesses tend to attend local churches in their respective ethnic enclave, eat at local restaurants, and shop at local stores alongside the working class Chinese and Korean immigrants. Such interactions, however, are rarer in Pico-Union. Because the social and economic consequences of these different types of interactions are not fully understood, much work remains to be done in delineating how ethnic capital helps or hampers the assimilation process for different ethnic groups.

### **Do Current Conditions Promote or Hinder Social Mobility for Immigrants?**

Research on social mobility can be summarized by two general insights. First, the historical trend over much of the twentieth century suggests that the “jump” in relative wages between the first and second generations is somewhere between 5 and 10 percentage points. If this trend were to continue, the low relative wage of today's immigrant workforce suggests that tomorrow's second-generation workers, who will make up an important part of the workforce in 2030, may have a sizable wage disadvantage of around 10 to 15 percent.

Second, the conclusion that ethnic skill differences have a half-life of one generation has important implications for ethnic inequality throughout the next century. For example, Canadian immigrants in 2000 earned 22.6 percent more than the baseline third

generation, while Mexican immigrants earned 45.1 percent less. If the historical pattern were to hold, the third-generation descendants of today's Canadian immigrants would earn about 17 percent more than the third-generation descendants of today's Mexican immigrants toward the end of the twenty-first century.

These glimpses into the crystal ball, however, rely crucially on the assumption that the same forces that promoted (or hindered) social mobility in the past century will continue indefinitely into the future. Although the intergenerational correlation for ethnic wage differences was around 0.5 for much of the twentieth century, this rate of social mobility was shaped by unique historical events and by social and economic circumstances that may not hold in the future.

In the first place, the immigrants who entered the United States at the beginning of the twentieth century faced dramatically different economic conditions than do today's immigrants. In the early 1900s, the low-skill immigrant workforce helped build America's manufacturing sector. Three-quarters of the workers at the Ford Motor Company in 1914 were foreign born, and more than half came from the less developed areas of southern and eastern Europe. These manufacturing jobs evolved into stable and well-paying economic opportunities for many immigrants and their descendants. It is far from clear that the employment sectors seeking immigrants today—particularly in a labor market that increasingly rewards high-skill workers—can provide the same growth opportunities that the rapidly expanding manufacturing sector offered a century ago.

Second, in some respects there is *less* ethnic diversity among the “new” immigrants than

there was among early twentieth-century immigrants. Current immigration is much more dominated by a single ethnic group. In 2000, for example, Mexicans made up almost 30 percent of the immigrant population. In contrast, the largest two national origin populations in the 1920 census were Germans and Italians, and together they constituted only

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*The relative lack of ethnic diversity in post-1965 immigration may greatly reduce the incentives for assimilation by allowing the largest ethnic groups to develop separate economies and social structures, interacting little with the economic mainstream.*

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24 percent of the foreign-born population at the time. The relative lack of ethnic diversity in post-1965 immigration may greatly reduce the incentives for assimilation by allowing the largest ethnic groups to develop separate economies and social structures, interacting little with the economic mainstream. These ethnic enclaves may well create obstacles to social mobility.

Third, the political reaction to the social and economic dislocations associated with the first Great Migration was swift and severe. By 1924, the United States had adopted strict limits on the number and types of people who could enter the country. This policy shift, combined with the poor economic op-

portunities available during the Great Depression, created a de facto moratorium on immigration. During the 1920s, 4.1 million people entered the United States; by the 1930s, that number was down to only half a million. This “breathing period” may have facilitated immigrant social mobility by cutting off the supply of new workers to ethnic enclaves and by reducing the economic and social contacts between the immigrants and their countries of origin.

Fourth, in an important sense some of the large immigrant groups that arrived in the United States before 1924 were “encouraged” to assimilate by changes in social attitudes and in tolerance toward particular national origin groups associated with the two World Wars. The *Harvard Encyclopedia of American Ethnic Groups* reports that “by summer 1918 about half of the [U.S.] states had restricted or eliminated German-language instruction, and several had curtailed freedom to speak German in public. . . . The total number of German language publications declined from 554 in 1910 to 234 in 1920.”<sup>21</sup> Surely these unique and sudden shifts in social attitudes had a distinctive effect on the social mobility of Germans in the United States.

Finally, the ideological climate that boosted social pressures for assimilation and acculturation throughout much of the twentieth century has all but disappeared. Put differently, the consensus summarized by the motto of the United States seal, “*E pluribus unum*” (out of many, one), no longer exists. The radical shift in the paradigm is best illustrated by Vice President Albert Gore’s 1994 ruminations on the melting pot—and his illuminating mistranslation of the motto: “We can build a collective civic space large enough for all our separate identities, that we can be *E pluribus unum*—out of one, many.”

Hence there is no certainty that today’s immigrants will experience the same degree of social mobility as the immigrants who arrived a century ago. It is still too early to know whether the dramatic shifts in the U.S. social, political, and economic climates will prove important enough to slow the rate at which the new immigrants are assimilated economically. Nevertheless, these shifts may signal that ethnic differences among immigrants will prove more enduring in future generations than they have in the past.

## Notes

1. Barry Edmonston and Jeffrey S. Passel, "Immigration and Immigrant Generations in Population Projections," *International Journal of Forecasting* 8, no. 3 (1992): 459–76.
2. Classic expositions of the melting pot hypothesis are given by Robert Park, *Race and Culture* (Glencoe, Ill.: Free Press, 1975); and Milton Gordon, *Assimilation and American Life* (Oxford University Press, 1964). The revisionist literature that questions the empirical validity of the hypothesis includes the studies of Nathan Glazer and Daniel P. Moynihan, *Beyond the Melting Pot: The Negroes, Puerto Ricans, Jews, Italians, and Irish of New York City* (MIT Press, 1963); Stanley Lieberson and Mary C. Waters, *From Many Strands: Ethnic and Racial Groups in Contemporary America* (New York: Russell Sage, 1988); Joel Perlmann, *Ethnic Differences: Schooling and Social Structure among the Irish, Italians, Jews, and Blacks in an American City, 1880–1935* (Cambridge University Press, 1988); and Alejandro Portes and Min Zhou, "The New Second Generation: Segmented Assimilation and Its Variants," *Annals of the American Academy of Political and Social Science* 530 (1993): 74–96. A good survey of the competing hypotheses is given by Min Zhou, "Segmented Assimilation: Issues, Controversies, and Recent Research on the New Second Generation," *International Migration Review* 31, no. 4 (1997): 825–58.
3. George J. Borjas, "The Economic Benefits from Immigration," *Journal of Economic Perspectives* 9, no. 2 (1995): 3–22; and Donald R. Davis and David E. Weinstein, "Technological Superiority and the Losses from Migration," Working Paper 8971 (Cambridge, Mass.: National Bureau of Economic Research, 2002).
4. George J. Borjas, "The Economics of Immigration," *Journal of Economic Literature* 32, no. 4 (1994): 1667–717; and David Card, "Is the New Immigration Really So Bad?" *Economic Journal* 115, no. 507 (November 2005): F300–23.
5. Note that the second generation may experience an increase in earning capacity—relative to that of the first generation—even if there were no regression toward the mean (each second-generation national origin group would then simply earn  $x$  percent more than the corresponding group in the immigrant generation, but there would be no narrowing of ethnic wage differentials). Although these two sources of economic mobility are sometimes confused in the literature, they capture different phenomena.
6. Barry R. Chiswick, "Sons of Immigrants: Are They at an Earnings Disadvantage?" *American Economic Review* 67, no. 1 (1977): 376–80; and Geoffrey Carliner, "Wages, Earnings, and Hours of First, Second and Third Generation American Males," *Economic Inquiry* 18, no. 1 (1980): 87–102.
7. The data sources are the 1940 and 1970 Integrated Public Use Microdata Series (IPUMS) of the decennial U.S. Census, as well as the pooled 1994–2003 IPUMS-CPS files of the March Current Population Surveys.
8. The log wage differential is calculated in the sample of workers aged eighteen to sixty-four who do not reside in group quarters, work in the civilian sector, are not enrolled in school, and report a valid measure of earnings for the calendar year prior to the survey. The adjusted wage differences were calculated by estimating a log weekly earnings regression model that includes dummy variables indicating the worker's generation, as well as a vector of dummy variables indicating the worker's socioeconomic characteristics (such as age and education). The regressions using pooled CPS data also include a vector of dummy variables indicating the year of the survey.
9. George J. Borjas, "The Intergenerational Mobility of Immigrants," *Journal of Labor Economics* 11, no. 1, pt. 1 (1993): 113–35.

10. See also Joel Perlmann and Roger Waldinger, "Second Generation Decline? Children of Immigrants, Past and Present—A Reconsideration," *International Migration Review* 31, no. 4 (1997): 893–922.
11. The ethnic background of second-generation Americans in the calculations presented in this section is determined by the mother's country of birth (unless only the father is foreign-born, in which case it is determined from the father's country of birth).
12. Borjas, "The Intergenerational Mobility of Immigrants" (see note 9); David Card, John DiNardo, and Eugena Estes, "The More Things Change: Immigrants and the Children of Immigrants in the 1940s, the 1970s, and the 1990s," in *Issues in the Economics of Immigration*, edited by George J. Borjas (University of Chicago Press, 2000), pp. 227–70.
13. The figure provides information for sixty-one national origin groups. Each group satisfies the sample restriction that there were at least twenty observations in both the 1970 and 2000 cross-sections to calculate the wage of the ethnic group in each respective generation.
14. As noted in the previous section, the relation between the relative economic status of first and second generations depends not only on the rate of regression toward the mean, but also on whether the second generation has a head start relative to the first generation. The intercept of the regression line illustrated in figure 1 measures this intergenerational head start (that is, it measures the wage growth exhibited by the descendants of an immigrant group that had the same relative wage as the baseline third generation). The intercept (with standard error) is 0.107 (0.021) in the 1940–70 regression and 0.069 (0.014) in the 1970–2000 regression.
15. George J. Borjas, "Long-Run Convergence of Ethnic Skill Differentials: The Children and Grandchildren of the Great Migration," *Industrial and Labor Relations Review* 47, no. 4 (1993): 553–73.
16. In a recent study, Richard Alba, Amy Lutz, and Elena Vesselinov question whether the correlation between the first and third generations illustrated in figure 2 correctly portrays the experience of European immigrant groups. They show that it is easy to reduce the measured intergenerational correlation to nearly zero by selectively excluding particular ethnic groups from the analysis. In particular, they show that the statistical significance of the intergenerational correlation vanishes if the regression analysis drops Mexicans, Chinese, Japanese, Austrians, Hungarians, Poles, Yugoslavs, and Russian Jews from the sample. The wisdom of this selective pruning of the statistical evidence is highly questionable. The magnitude (and sign) of *any* statistical correlation can be changed at the researcher's whim by selectively screening the data; in this instance, by dropping observations of groups that do either too well or too poorly. See Richard D. Alba, Amy Lutz, and Elena Vesselinov, "How Enduring Were the Inequalities among European Immigrant Groups in the U.S.?" *Demography* 38, no. 3 (2001): 349–56; and George J. Borjas, "Long-Run Convergence of Ethnic Skill Differentials, Revisited," *Demography* 38, no. 3 (2001): 357–61.
17. See Kenneth A. Couch and Thomas A. Dunn, "Intergenerational Correlations in Labor Market Status: A Comparison of the United States and Germany," *Journal of Human Resources* 32, no. 1 (1997): 210–32; Gary Solon, "Intergenerational Income Mobility in the United States," *American Economic Review* 82, no. 3 (1992): 393–408; and David J. Zimmerman, "Regression toward Mediocrity in Economic Status," *American Economic Review* 82, no. 3 (1992): 409–29.
18. George J. Borjas, "Ethnic Capital and Intergenerational Mobility," *Quarterly Journal of Economics* 107, no. 1 (1992): 123–50.

19. George J. Borjas, "Ethnicity, Neighborhoods, and Human Capital Externalities," *American Economic Review* 85, no. 3 (1995): 365–90. See also David M. Cutler, Edward L. Glaeser, and Jacob L. Vigdor, "Ghettos and the Transmission of Ethnic Capital," in *Ethnicity, Social Mobility and Public Policy: Comparing the US and UK*, edited by Glenn Loury, Tarig Modood, and Steven M. Teles (Cambridge University Press, 2005), pp. 204–22; and Alexis Leon, "Does 'Ethnic Capital' Matter? Identifying Peer Effects in the Intergenerational Transmission of Ethnic Differentials," Working Paper (University of Pittsburgh, 1995).
20. Min Zhou, "How Neighborhoods Matter for Immigrant Adolescents," CPRC Brief (Berkeley, Calif.: California Policy Research Center, December 2002); see also Min Zhou and Susan S. Kim, "Community Forces, Social Capital, and Educational Achievement: The Case of Supplementary Education in the Chinese and Korean Immigrant Communities," *Harvard Educational Review* (2006, forthcoming).
21. Kathleen M. Conzen, "Germans," in *Harvard Encyclopedia of American Ethnic Groups*, edited by Stephen Thernstrom (Harvard University Press, 1980), p. 423.



# Early Childhood Development and Social Mobility

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*W. Steven Barnett and Clive R. Belfield*

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## Summary

Steven Barnett and Clive Belfield examine the effects of preschool education on social mobility in the United States. They note that under current policy three- and four-year-old children from economically and educationally disadvantaged families have higher preschool attendance rates than other children. But current programs fail to enroll even half of poor three- and four-year-olds. Hispanics and children of mothers who drop out of school also participate at relatively low rates. The programs also do little to improve learning and development.

The most effective programs, they explain, are intensive interventions such as the model Abecedarian and Perry Preschool programs, which feature highly qualified teachers and small group sizes. State preschool programs with the highest standards rank next, followed by Head Start and the average state program, which produce effects ranging from one-tenth to one-quarter of those of the best programs. Typical child care and family support programs rank last.

Barnett and Belfield point out that preschool programs raise academic skills on average, but do not appear to have notably different effects for different groups of children, and so do not strongly enhance social mobility. In such areas as crime, welfare, and teen parenting, however, preschool seems more able to break links between parental behaviors and child outcomes.

Increased investment in preschool, conclude Barnett and Belfield, could raise social mobility. Program expansions targeted to disadvantaged children would help them move up the ladder, as would a more universal set of policies from which disadvantaged children gained disproportionately. Increasing the educational effectiveness of early childhood programs would provide for greater gains in social mobility than increasing participation rates alone.

The authors observe that if future expansions of preschool programs end up serving all children, not just the poorest, society as a whole would gain. Benefits would exceed costs and there would be more economic growth, but relative gains for disadvantaged children would be smaller than absolute gains because there would be some (smaller) benefits to other children.

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**I**nvestments in the skills of a nation's citizens can affect both the general level of their productivity and income and disparities in incomes and living standards among them. In this article we examine how current public investments in preschool education for U.S. children are affecting the skills of those children generally, as well as the extent to which those investments are reducing income-related disparities among them—not only during childhood but also when they are adults. We also consider how new investments in those programs might affect children's skills and increase social mobility.

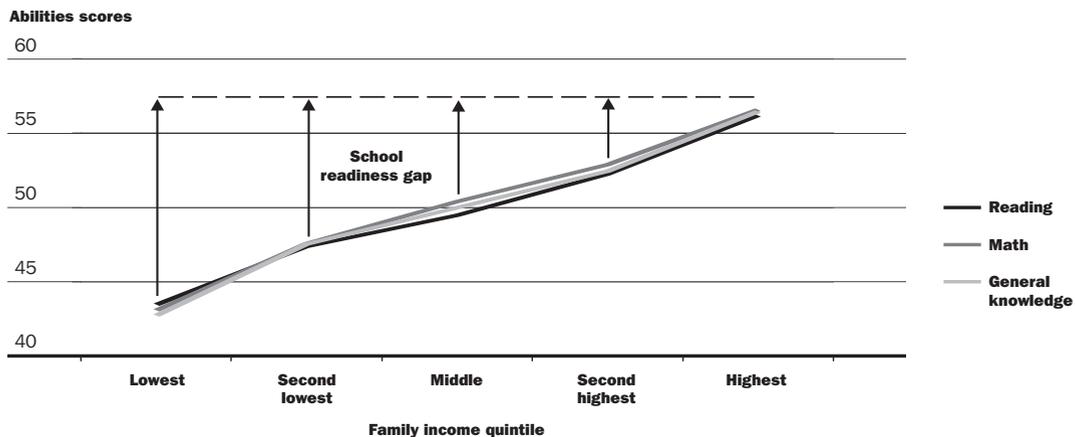
Much research on preschool education and children's skills has been motivated by concerns about income-related disparities in young children's language and cognitive abilities, as well as other measures of their development, including socioemotional skills. Such disparities become evident in children as young as age three and appear to persist—indeed, may even widen—through the school years.<sup>1</sup> Researchers have examined various preschool education programs to learn which might best prevent or reduce these early disparities so that poor children can enter school with skills more nearly equal to those of more highly advantaged children. However, in recent years at least, researchers have paid less attention to an important related question: how preschool education can enhance social mobility by enabling disadvantaged children to achieve as adults greater socioeconomic success than did their parents.

That poor children begin their lives with lower skills than those of more privileged children is clear. Figures 1 and 2 present estimates of the link between preschool children's skills, both cognitive and social, and the income of their families; they suggest that

skills rise evenly with family income. At present federal, state, and local governments in the United States fund a wide variety of early childhood education programs that serve many but not all children. Parents of more advantaged children often pay privately for various preschool programs for their children. Although existing publicly funded programs are demonstrably raising the skills of the children who participate in them, they clearly have not—as figures 1 and 2 show—broken the link between children's skills and family income. Would increased public investment in preschool education provide additional benefits for children in poverty and help to improve social mobility? If so, what form of investment would be most effective? Some observers argue in favor of limiting increased spending to programs that serve only poor children. Others favor creating a new, universal preschool program that would serve all children alike. A key empirical question related to the latter proposal is whether a quality preschool education program for all children would shift the entire slopes of figures 1 and 2 upward or would rotate the bottom of the slopes upward while the top remained anchored.

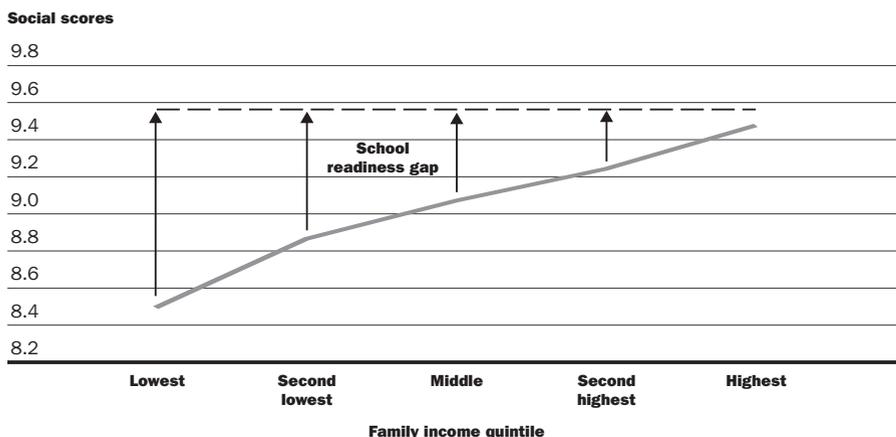
The extent to which preschool policies improve the abilities of all children or reduce disparities in learning and development will depend on the answers to several questions. First, to what extent do such policies alter the distribution of preschool education opportunities? Do they increase the participation of disadvantaged children from low-income and low-education families in effective programs? Do they affect the participation of more advantaged children? Second, to what extent are such programs educationally effective? A subsidiary question is the extent to which preschool programs may improve the abilities of disadvantaged children relative to those of

**Figure 1. Abilities of Entering Kindergartners, by Family Income, National Data, Fall 1998 (reported by NIEER from ECLS-K)**



Source: W. Steven Barnett, Kirsty Brown, and Rima Shore, "The Universal vs. Targeted Debate: Should the United States Have Preschool for All? *Preschool Policy Matters* 6 (New Brunswick, N.J.: NIEER, 2004).

**Figure 2. Social Skills of Entering Kindergartners, by Family Income (NIEER Analysis of ECLS-K)**



Source: See figure 1.

advantaged children. Third, to what extent do these early effects on children's learning and development contribute to their abilities as they grow older, and what aspects of public policy contribute to sustained effects? Is it possible that these early effects may not only be sustained throughout a lifetime but even be passed on to later generations as they affect parents' investments in children?

## Participation in Early Childhood Programs

Early childhood programs fall into three broad types: early schooling for children from ages three to five, interventions and child care for children from birth to age two, and parenting education. The coverage of the latter two is limited. Before age three, children participate in interventions and center-based

care at quite low rates. The largest comprehensive child development program for children under age three (other than early interventions for children with disabilities) is the federal Early Head Start program, which served fewer than 62,000 children in 2003.<sup>2</sup>

Programs for parents also have quite limited participation. A few states—Minnesota, Missouri, and Arkansas—invest in these pro-

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*Participation rates in parent programs did not differ significantly by family characteristics such as income and parental education.*

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grams more than others, but even their funding remains limited. Some programs target economically disadvantaged families, others do not. The Parents as Teachers program served more than 325,000 children in 261,000 families in 2003–04, far more than any other parent program.<sup>3</sup> Our analyses of data from the National Household Education Survey (NHES) of 2001 found that just 12 percent of young children had parents who reported participating in a parenting education program or support group (9 percent for parenting education alone). Participation rates in parent programs did not differ significantly by family characteristics such as income and parental education.

Among children nearing school age, on the other hand, participation in preschool education is increasing dramatically. In 1950 only 21 percent of five-year-olds were in school. By 1965, 70 percent of five-year-olds attended kindergarten, but only 16 percent of

four-year-olds and 5 percent of three-year-olds were in school. Today kindergarten attendance is nearly universal and 65 percent of four-year-olds and 42 percent of three-year-olds attend school.<sup>4</sup> These figures, however, are based on parents' reports and thus necessarily on parents' views about what constitutes "school."

For parents of five-year-olds, "school" is almost entirely kindergarten, a preschool program that has some uniformity and is primarily provided in public schools. Three- and four-year-old children, however, attend a complex patchwork of public and private programs that go by a variety of names, including preschool, pre-kindergarten (pre-K), four-year-old kindergarten (4K), Head Start, child care, day care, and nursery school. These programs vary widely in educational intent. Parents of three- and four-year-olds typically report private child care provided in classrooms, but not child care in private homes, as school.

### **Kindergarten**

Some children still do not attend kindergarten, which is not compulsory in most states. There is little research on why they do not attend, though the fact that only half-day programs are available in some communities may be a factor for working families. Only in the past twenty years has full-day kindergarten become common, with 63 percent of children who attend kindergarten participating in a regular school day of about six hours. The others attend half-day for two and a half to three hours, frequently in double shifts, some in the morning and some in the afternoon. The distribution of full-day kindergarten is uneven. Of the nine states that require it, all are in the Southeast.<sup>5</sup> Full-day attendance is much more common for African American children (76 percent) than

for white (56 percent), Hispanic (60 percent), or Asian children (57 percent).<sup>6</sup> It is also more common among children in poverty (63 percent) than among others (55 percent).<sup>7</sup>

### **Public Preschool Education**

At ages three and four children attend a variety of public preschool programs. For children in poverty, the federal government provides Head Start. State and local education agencies also provide preschool education programs. In addition, federal and state governments subsidize child care, and many children attend private child care centers with and without public subsidies. These programs vary in their goals, resources, standards and regulation, and length of day and year.

Head Start serves about 900,000 children, the vast majority at ages three and four. It serves 12 percent of children at age four, and serves just over half of those children for two years starting at age three. Although Head Start targets children in poverty, self-reported household income data on program participation indicate that by the second half of the school year about half the children served are not poor but “near poor.”<sup>8</sup> The reasons why the targeting is less than exact include allowable exceptions to poverty in the eligibility rules, changes in families’ economic circumstances after enrollment, and probably some children enrolling who do not meet the eligibility criteria. It also seems likely that some of this apparent difference is due to Head Start’s use of family income rather than household income to determine eligibility. Although the overwhelming majority of Head Start children are from lower-income families, it is incorrect and misleading to simply subtract Head Start enrollment from the total number of three- and four-

year-olds whose household income falls below the poverty line to determine how many poor children are not served. The fact that poverty is a moving target presents a serious challenge for education programs that aim to serve all poor children.<sup>9</sup>

State and local governments support two types of preschool education programs. First, every state serves young children with disabilities in the public schools, though the percentage served varies substantially.<sup>10</sup> States can serve children with developmental delays in these programs, as well as those with identified disabilities. Second, the District of Columbia and forty-one states also fund preschool education for other children (though in a few cases this is only through supplements to Head Start). Most of these programs target children in poverty or otherwise at elevated risk for poor achievement later. Oklahoma and Georgia have for several years sought to provide preschool education to all four-year-olds, and Oklahoma has essentially achieved that goal. Florida moved to join them in 2005, and other states have taken steps in that direction. While state preschool special education programs serve children at ages three and four, most of the states’ general preschool education programs focus primarily or entirely on four-year-olds.

These publicly funded preschool education programs are sometimes based in the public schools and sometimes in private programs. In 2004–05 state preschool programs served 6 percent of four-year-olds in special education and 17 percent of four-year-olds, most of them disadvantaged, in general programs, although precise demographic descriptions of the children are not available. The corresponding figures for three-year-olds are 4 percent in special education and 3 percent in other state preschool programs. Additional

children attend preschool programs in local public schools using local or federal funds, but no one tracks their numbers nationally.<sup>11</sup>

### **Child Care and Private Preschool Education**

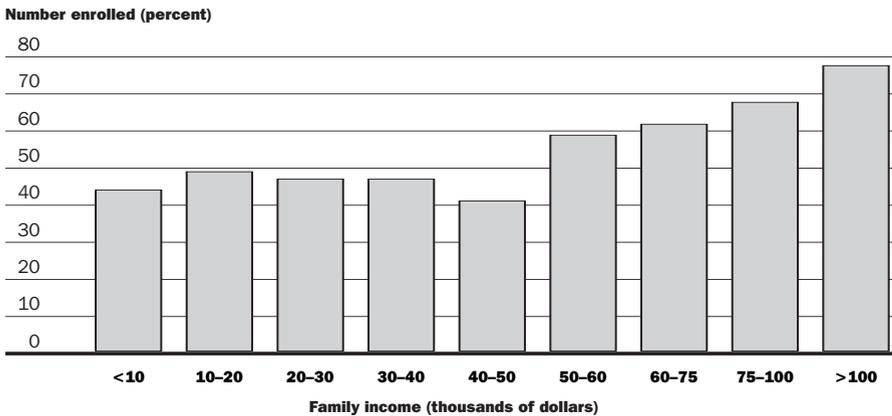
Children also attend preschool programs paid for publicly through federal and state child care funds and privately by parents. State educational standards for these programs are minimal. The only reliable data on the number of children enrolled in all public and private programs are provided by parental reports in national surveys and the decennial census. These data do not allow reliable breakdowns by type of program or funding source, because parents report virtually any classroom as educational regardless of teacher qualifications and educational practices, and many children attend multiple programs or programs that blend funding streams. Publicly funded child care programs generally do not enroll children for an entire school year because enrollment is contingent on family income and parental employment, which fluctuate over time. Thus, while an average of 1.73 million children receive services (57 percent in centers) subsidized by the Child Care Development Fund (CCDF) each month—roughly 225,000 at age three and 225,000 at age four in fiscal year 2004—this does not mean that all of them receive services continuously during the calendar or school year.<sup>12</sup>

At the national level one can roughly estimate the number of children in child care and local public or private preschool programs by subtracting from parent-reported total enrollment the number of children in major public education programs (Head Start, special education, and regular state preschool). At age four, about 66 percent of children attend a center-based program of some sort. The major public education programs account for

34 percent, leaving 32 percent in private programs or locally funded public school programs. At age three, 39 percent attend a center-based program, and subtracting the 14 percent in major public education programs leaves about a quarter of the population (25 percent) in child care and local private or public preschool. Thus, most three- and four-year-old children in a classroom are not in one of the major public preschool education programs and most of this residual group is not receiving a direct child care subsidy (13 percent of three- and four-year-olds receive a CCDF subsidy, but not all are in centers).<sup>13</sup>

### **Program Participation by Family Background**

Data from the National Household Education Survey can be used to estimate preschool program participation (public and private combined) by various family background characteristics and to explore the determinants of program participation.<sup>14</sup> There are striking differences in participation by income, parental education, ethnicity, and region. From figure 3, it is apparent that preschool participation declines as income falls until a point just below median income. Thereafter, participation levels off or even rises as income falls. It seems reasonable to infer from this graph that existing public programs are already substantially increasing preschool program participation rates among economically disadvantaged children. NHES data on enrollment at age four in 1991 and 2001 indicate a substantial increase over time for children whose mothers are high school dropouts (36 percent to 49 percent), but these children continue to participate in preschool programs at lower rates than do children of high school graduates (65 percent) and college graduates (70 percent).<sup>15</sup> Clearly there is room for further equalization of access to preschool.

**Figure 3. Preschool Participation, by Income, 2001**

Source: W. Steven Barnett and Donald Yarosz, "Who Goes to Preschool and Why Does It Matter?" *Preschool Policy Matters* 7 (New Brunswick, N.J.: NIEER, 2004).

Preschool participation rates also vary by ethnicity. African American children have the highest rates, with rates for white non-Hispanic children and Asians only slightly lower. Hispanic children have by far the lowest rates. Rates vary by ethnicity partly because the South provides many public programs and the West provides few. Once family background characteristics and regions are taken into account, participation rates for Hispanic children are not significantly lower than for white non-Hispanic children. Rates for African American children remain somewhat higher even after such adjustments.<sup>16</sup>

Overall, current U.S. public policy increases preschool participation at ages three and four for children from economically and educationally disadvantaged families relative to others, largely through major public education programs. But current programs fail to enroll even half of the children in poverty at ages three and four, or half of the children whose mothers are high school dropouts, even at age four. There is thus tremendous room for public policies to increase enroll-

ment of the most disadvantaged children in preschool education programs. Moreover, the programs that do serve such children—child care and even some public education programs—do little to improve their learning and development. Public policies could also do much more to increase participation rates of children from families up to about the median income. Smaller but still substantial increases in enrollment are possible for all but the wealthiest and best educated.

### **Influence of Early Childhood Programs on Child Development and Adult Outcomes**

How do current programs affect children's eventual educational attainment, earnings, family formation, and propensity to commit crime? And how much more effective might other policies be? Many researchers have examined the effects of various early childhood education programs, with the vast majority focusing on short-term effects on learning and development.

There are literally hundreds of studies of the immediate and short-term effects of child

care and early interventions, and their findings have been conveniently summarized in both quantitative meta-analyses and traditional literature reviews.<sup>17</sup> Across these studies, the average initial effect on cognitive abilities is about 0.50 standard deviations, roughly equivalent to 7 or 8 points on an IQ test with a 100-point scale and a standard deviation of 15. Average effects on self-esteem, motivation, and social behavior are also positive, though somewhat smaller. In what follows, we review the best evidence to summarize what is known about how various programs—family support, child care, Head Start, public preschool, and several very intensive educational interventions (which have yet to be implemented on a large scale)—affect children’s skills.

### Family Support Programs

Although some studies produce larger estimates, the most reliable research—randomized experimental trials—estimates that family support programs improve both cognitive and social development by perhaps 0.10 standard deviations.<sup>18</sup> Randomized trials of many home-visiting programs have failed to find consistent effects on child development, probably because very few of these programs are intensive enough to produce significant cognitive benefits for children.<sup>19</sup> Similarly, randomized trials of comprehensive services delivered in “two-generation” models—so called because they serve both children and parents—have disappointing findings, again because they do not provide substantial direct services to children.<sup>20</sup>

These findings support two conclusions about program effectiveness, both of which are consistent with other reviews of the research.<sup>21</sup> First, influencing child development indirectly through parents appears to be relatively ineffective. Second, a program’s

effect on child development varies with the frequency and duration of the intervention provided. Even the most intensive family support program devotes far fewer hours to parents than child-directed interventions devote to children. In addition, the costs of such programs, particularly those intensive enough to produce even modest benefits, are substantial, thus likely making them less cost-effective than other preschool programs.<sup>22</sup>

Despite the modest effects of most home-visiting programs on children’s cognitive development, one very intensive program has substantially improved the home environment and development of young children. David Olds and colleagues found in a series of randomized trials that a program of home visits by nurses to economically disadvantaged new mothers reduced the number and improved the timing of pregnancies and births after the first child and also reduced the children’s need for medical care for injuries and ingestions.<sup>23</sup> Other popular medically oriented programs with similar goals, however, have not been similarly effective in randomized trials.<sup>24</sup> Olds’s nurse home-visiting program has also been found to improve modestly both the children’s cognitive development (effect size of 0.15 using the population standard deviations for the tests) and parents’ report of behavior problems.<sup>25</sup>

### Child Care and Early Education

Of all the preschool programs available to directly serve children, only center-based programs in which children attend classrooms or individual tutoring sessions improve cognitive development. The type and quality of activities in these programs vary tremendously. In the best programs children are systematically, regularly, and frequently engaged in a mix of teacher-led and child-initiated activities that enhance the development of language, knowl-

edge of concepts and skills, problem-solving abilities, self-regulation and other socio-emotional skills, attitudes, values, and dispositions. In the worst programs, where little is planned, children wander aimlessly, with few interesting and thought-provoking interactions, activities, or materials, and teachers are unresponsive to their interests or needs. To the surprise of no one, the better programs have the better outcomes.

Studies find that typical center-based child care (as opposed to home or other types of care) improves cognitive abilities by about 0.10–0.33 standard deviations. Most estimates are in the 0.10–0.15 range for cognitive and language development.<sup>26</sup> Evidence is mixed on whether effects are larger when care begins before age three.<sup>27</sup> Some nonexperimental studies have found that child care can increase antisocial behavior at school entry, with effect sizes of about 0.08–0.20. The evidence is mixed with respect to whether effects are larger for disadvantaged children than for those from more advantaged homes.<sup>28</sup> Some studies have found that higher program quality, measured in various ways, may lead to small improvements (0.04–0.08) in cognitive and language ability and in behavior.<sup>29</sup> Most child care programs, however, facing minimal government requirements and poor funding, are not designed to improve child development.

By contrast, Head Start, the federal government's largest comprehensive child development intervention, is specifically designed to improve children's cognitive, social, emotional, and physical development, as well as to support their parents in a variety of ways. An excellent recent randomized trial estimates, however, that one year of Head Start has fairly small effects, from less than 0.10 to 0.24 for standardized measures of language

and cognitive abilities.<sup>30</sup> This finding echoes that of an Early Head Start randomized trial in which cognitive and language effects were about 0.10 or smaller.<sup>31</sup> Randomized trials of both Head Start and Early Head Start find small decreases (about 0.10) in antisocial behavior. They find no evidence of negative effects on social and emotional development. (The Head Start study did not estimate the

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*Of all the preschool programs available to directly serve children, only center-based programs in which children attend classrooms or individual tutoring sessions improve cognitive development.*

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effect of Head Start relative to no program, but over and above whatever experiences children received otherwise.)

The best short-term evidence on the effects of preschool programs sponsored by public schools comes from relatively rigorous studies of the Chicago Child-Parent Centers and the universal preschool program in Tulsa, Oklahoma. These studies have found initial effects on standardized tests of cognitive and language abilities ranging from 0.38 to 0.79, depending on the measure. The Chicago Child-Parent Center study found a positive effect on social adjustment in school; the Tulsa study did not look at social development.

The Tulsa study can be directly compared with the Head Start randomized trial on three tests; in each case, the Tulsa effects are

several times as large.<sup>32</sup> As with the Head Start study, the Tulsa study estimates effects over and above the experiences that children can get outside the state program, here including Head Start and child care. And the Tulsa study, like the Head Start study, lasted only one year; effects might be larger if the program lasted longer. But clearly, caution is warranted in comparing these two studies.

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*There is relatively little basis for estimating the effects of intensive educational interventions on children from middle-income or highly advantaged families.*

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The Head Start study involves many more children in more diverse circumstances, and the comparison addresses only one program goal (children's cognitive development). It is plausible that the Tulsa and Chicago programs produced larger gains because their teachers were far more highly qualified than Head Start teachers and were also paid much higher salaries. Whereas Head Start requires only that half of its teachers have a two-year degree, Tulsa and Chicago required certified teachers with a four-year-college degree. The Tulsa findings were recently replicated in an evaluation of state-funded preschool programs for four-year-olds in five states, all of which require certified teachers (Oklahoma, New Jersey, South Carolina, Michigan, and West Virginia).<sup>33</sup>

Researchers using data from the Early Childhood Longitudinal Study–Kindergarten Cohort (ECLS-K), a national sample of children

entering kindergarten in 1998, have found smaller effects for prekindergarten for disadvantaged children—0.16 to 0.28—perhaps reflecting the poorer performance of state-funded preschool programs overall (many have weaker standards than the Chicago or Tulsa program). The ECLS-K data suggest even smaller effects for child care, where regulations typically require little more than a high school diploma for teachers.<sup>34</sup>

Randomized trials of North Carolina's Abecedarian preschool program and Michigan's Perry Preschool program find that these more intensive interventions involving disadvantaged children up to the age of school entry improve cognitive and language abilities from 0.75 to 1.50 standard deviations—twice the effect of the better state preschool programs and eight times to ten times the effect of Early Head Start and Head Start.<sup>35</sup> These effects suggest a dose-response relationship, in which high teacher quality, small class sizes and high teacher-pupil ratios, and the amount of education given are all implicated.<sup>36</sup>

The Perry Preschool study found positive effects on social behaviors similar to most studies of such effects in the first years of school. In contrast, the Abecedarian study, which examined intensive education through full-day child care over five years, found negative, though transitory, effects on social behavior at school entry. Across studies of early education intervention, intensive research programs, and large-scale public programs, including Head Start, short-term effects average 0.25 to 0.40 for self-esteem, problem behavior, and other social behaviors.<sup>37</sup>

There is relatively little basis for estimating the effects of intensive educational interventions on children from middle-income or

highly advantaged families. Few researchers have addressed the topic at all, and even fewer have done so in a rigorous way. The only randomized trial of a preschool program for a highly advantaged population (average IQ was 2 standard deviations above the mean) had a very small sample, limiting its ability to detect effects. Nevertheless it found modest improvements in early academic abilities, at least for boys.<sup>38</sup> The Tulsa study and the later five-state evaluation of preschool education provide some insights, as Oklahoma and West Virginia both serve the general population, not just disadvantaged children, and the other three states also serve populations with some socioeconomic variation. Both studies find that effects are somewhat larger for disadvantaged children.

### **Long-Term Effects**

Though early child care and education have positive initial effects on cognitive abilities, those effects tend to decline over time and in many studies are negligible several years after children leave the programs.<sup>39</sup> The fade-out is most salient for general cognitive abilities, or aptitude, as measured by IQ and similar measures. Only the longest-lasting, most intensive educational interventions (year round, full day over many years), like the Abecedarian program, seem able to produce permanent gains in general cognitive abilities, and these appear considerably smaller than initial gains.<sup>40</sup> Gains on subject-specific cognitive abilities (reading, math, and so forth) seem to be longer lasting, and while these more enduring gains are smaller than the initial gains, they do not appear to fade as often or as much as IQ gains.

Although there is essentially no research on the very long-term effects of typical U.S. child care on educational achievement and attainment, there are many studies of the

long-term effects of large-scale public preschool education programs and intensive educational interventions on educational achievement and school progress.<sup>41</sup> Estimated effects on achievement have been highly variable because of differences in research methods and procedures.<sup>42</sup> In the more rigorous studies, which tend to examine the more intensive educational programs, effects on achievement ranged from 0.50 to 0.75 into the high school years. The Chicago Child-Parent Centers study suggests smaller than average long-term achievement gains from large-scale public programs. For Head Start, the initial gains would suggest even smaller long-term achievement gains. Although some studies have found long-term educational gains from Head Start, the effects tend to vary by ethnicity. The lack of such variation in other studies raises questions about these estimates.<sup>43</sup>

Full evidence on long-term effects is reported in tables 1 and 2. Studies that use cumulative school records data to look at grade repetition, special education placements, and high school graduation provide perhaps the strongest basis for comparing the long-term effects of different programs. They find uniformly positive and statistically significant effects on school progress and placement—effects that have been causally linked to program effects on knowledge and skills.<sup>44</sup>

In an earlier review, Steven Barnett combined data from long-term studies of preschool program effects on grade repetition and special education to compare the effects of intensive interventions, Head Start, and public school programs.<sup>45</sup> Intensive interventions had twice the effect in reducing grade repetition (twenty-four studies) and four times the effect in reducing special education placement (twenty studies) of Head Start and

**Table 1. Effects of Early Childhood Interventions on Education**

Change (percent except as indicated)

Intervention and educational outcome	Effect
<b>Special education placement</b>	
Abecedarian (ABC)	-48
Perry Preschool	-43
Chicago Child-Parent Centers	-32
Head Start	-28
Public School and Head Start <sup>a</sup>	-29
<b>Retained in grade</b>	
Abecedarian	-47
Perry Preschool	-13
Chicago Child-Parent Centers	-33
Early Childhood Longitudinal Study-Kindergarten Cohort	Negative effect (reduces)
Public School and Head Start <sup>b</sup>	-30
<b>High school dropout likelihood</b>	
Abecedarian	-32
Perry Preschool	-25
Chicago Child-Parent Centers	-24
<b>High school completion</b>	
Head Start: white children	20 percentage point increase
Head Start: African American children	No clear effect
<b>College progression</b>	
Abecedarian enrollment in four-year college	3 times as likely
Perry Preschool	No clear effect
Head Start: white children	28 percentage point increase
Head Start: African American children	No clear effect

Sources: Clive Belfield and others, "Cost-Benefit Analysis of the High/Scope Perry Preschool Program Using Age 40 Follow-Up Data," *Journal of Human Resources* 41 (2006): 162-91; W. Steven Barnett, "Does Head Start Have Lasting Cognitive Effects? The Myth of Fade Out," in *The Head Start Debates*, edited by Edward Zigler and Sally Syfco (Baltimore, Md.: Brookes Publishing Co., 2004); W. Steven Barnett and Leonard Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program and Its Policy Implications," *Economics of Education Review* (in press); Arthur Reynolds and others, "Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Centers," *Educational Evaluation and Policy Analysis* 24, no. 4 (2002): 267-303; Eliana Garces, Duncan Thomas, and Janet Currie, "Longer-Term Effects of Head Start," *American Economic Review* 92 (2002): 999-1012; Janet Currie, "Early Childhood Programs," *Journal of Economic Perspectives* 15 (2001): 213-38; Centers for Disease Control and Prevention, "Community Interventions to Promote Healthy Social Environments. Early Childhood Development and Family Housing," *Morbidity and Mortality Weekly Report* 51 (2002); Judy Temple, Arthur Reynolds, and Wendy Miedel, "Can Early Intervention Prevent High School Drop-Out? Evidence from the Chicago Child-Parent Centers," *Urban Education* 35 (2000): 31-56.

a. Nine-study average.

b. Ten-study average.

public school programs. Notably, many studies that have looked at these strong indicators of school failure have very similar findings. Given the small size of several of the experimental studies, including Perry Preschool and Abecedarian, the frequent replication of their findings in these other studies strengthens confidence in their results.

Although fewer studies have looked at effects on high school graduation, researchers consistently find positive effects for Head Start, public school programs, and more intensive interventions. It is difficult to feel comfortable with generalizations from so few studies, though grade repetition and special education placement (which have been studied much more often) are strong predictors of dropping out of school. However, the estimated effects of the three intensive programs are quite consistent: a 15 to 20 percentage point increase in high school graduations (not GEDs or other substitutes), from around 50 percent to around 67 percent. The estimated effect on high school graduation in the Chicago study was about 10 percentage points, roughly half that of the Perry Preschool and Abecedarian programs. A few studies have focused on Head Start, with inconsistent results: one finds high school graduation rates increased for girls by 15 percentage points, another finds a 20 percentage point increase for whites only. Such gains seem improbable, given the very small initial effects found in the national impact study.

The Abecedarian study, but not the Perry Preschool study, found gains in college enrollment. It is difficult to know how to interpret this finding. The Perry Preschool sample was much more educationally disadvantaged than the Abecedarian sample. It may have been that college was just too far beyond their reach, given their starting abilities,

**Table 2. Effects of Early Childhood Interventions on Adolescent and Adult Behaviors**

Percent except as indicated

Intervention and behaviors	Control or comparison group	Group receiving early childhood program
Teenage parenting rates		
Abecedarian	45	26
Perry Preschool	37	26
Chicago Child-Parent Centers	27	20
Well-being		
Health problem (Perry Preschool)	29	20
Drug user (Abecedarian)	39	18
Needed treatment for addiction (Perry Preschool)	34	22
Abortion (Perry Preschool)	38	16
Abuse/neglect by age 17 (Chicago Child-Parent Centers)	9	6
Criminal activity		
Number of felony violent assaults (Perry Preschool)	0.37	0.17
Juvenile court petitions (Chicago Child-Parent Centers)	25	16
Booked or charged with a crime (Head Start)		12 percentage points lower
Net earnings gain from participating in early childhood programs		
Abecedarian	\$35,531	
Perry Preschool Program	\$38,892	
Chicago Child-Parent Centers	\$30,638	
Head Start	No effect	

Sources: Belfield and others (see table 1); Masse and Barnett (see table 1); Arthur Reynolds and others (see table 1); Garces and others (see table 1); Currie (see table 1); Centers for Disease Control and Prevention (see table 1).

whereas the Abecedarian children were close enough that the boost they received made college possible for a significant share.

Although relatively few in number, most studies that assessed long-term effects on social behavior found positive (though not always statistically significant) effects, and no study reported increased aggression beyond first grade.<sup>46</sup> Five studies of educational interventions that investigated long-term effects on social behavior found beneficial effects on classroom behavior, social adjustment, and crime.<sup>47</sup> These include two of the three studies that linked elevated aggression with full-time child care that began in infancy.<sup>48</sup> The third, the Abecedarian study, found no long-term effect on crime and

delinquency, though rates were relatively low for both groups.<sup>49</sup> The strongest effects on crime were found in the Perry Preschool study, where baseline rates for the control group were quite high: the number of arrests was cut by 50 percent. In the Chicago study, the number of arrests by age eighteen was cut by 40 percent, while the share of people ever arrested was cut by a third (or 8 percentage points), from 25 percent to 17 percent. Data on Head Start are limited to two studies: one finds a 12 percentage point reduction in crime for African Americans only; the other, a 10 percentage point reduction for girls only.<sup>50</sup>

There is little research on the effects of preschool programs on later fertility behavior.

The model programs show strong effects, and family support interventions have reported direct effects on fertility behavior of the mothers. Effects are reported in table 2.

Finally, direct effects have been found on employment and earnings. One study found that Head Start raised earnings, but only for white children whose parents were high school dropouts. The model program effects,

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*A reasonable conclusion is that auspices per se have little to do with program effectiveness, once goals, standards, and resources are taken into account.*

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shown in table 2, may be considered upper bounds on the earnings gain from state-funded preschool.

### Program Design and Effectiveness

From the evidence reviewed so far, it should be clear that some preschool programs are more effective than others. A rough ranking from least to most educationally effective under current policies is typical child care and family support programs, Head Start and many state preschool programs, state preschool programs with high standards (far from all of them), and intensive educational interventions. On average, state preschool programs differ little from Head Start in their effects on child development, but states with lower standards likely have worse outcomes and those with higher standards, better outcomes. A reasonable conclusion is that auspices per se have little to do with program

effectiveness, once goals, standards, and resources are taken into account. The pattern is clearest for short-term outcomes, where the most data are available. It is less clear for long-term effects on educational attainment and adult social and economic outcomes, where fewer data are available. It does not seem plausible that programs with very weak initial effects would have proportionately larger effects on adult outcomes than on short- and medium-term outcomes.

Given the limits of the data, it appears best to produce a range of estimates of the programs' effects on cognitive and social-emotional development. An upper bound would be effects of the size produced by the Perry Preschool and Abecedarian programs. One then might expect high-quality interventions in public preschool programs to produce effects of half that size. Less educationally intensive public programs, including Head Start *under current policies*, would be likely to produce effects of one-quarter or less, and possibly only one-tenth, of those of Perry and Abecedarian. Regarding effects on children who are not disadvantaged, based on the meager evidence we consider two different scenarios. One is that effects are half those estimated for disadvantaged children. The other is that effects on the educational attainment of advantaged children are essentially zero. Given the small effects of child care, if programs effectively target disadvantaged children, then effects on other children are irrelevant.

In designing policy proposals to improve preschool programs, it should be kept in mind that the most effective educational interventions were more intensive in two senses. First, they had highly qualified, well-paid teachers and high ratios of teachers to children. Second, some provided a large number of hours of intervention over two to nearly

five years. The Perry program provided one teacher (not an assistant) for every six or seven students. Although it operated only half-day during the school year (and most, but not all, children attended for two years), teachers visited each child at home weekly. The Abecedarian program had a teacher and an aide for every twelve children and operated for up to ten hours a day, fifty weeks a year, over almost five years. This pattern can hardly be considered surprising and is consistent with other evidence. It posits that more highly educated, better prepared, better supervised, and better compensated teachers are more effective.<sup>51</sup> Smaller class sizes and better teacher-student ratios result in better teaching and more individual attention, which produce larger gains in achievement and school success.<sup>52</sup> Finally, more hours of effective interventions produce larger effects.

### **The Effects of Early Childhood Education on Social Mobility**

The above evidence on access and outcomes suggests the following conclusions about the extent to which preschool, as it now stands, affects social mobility by breaking down the links between parental socioeconomic status and behaviors and children's status and behaviors.

Although current public programs move in the direction of equalizing preschool opportunities across races and income levels, they fall considerably short of their goal. Preschool opportunities are not close to equal for Hispanic children. Nor are preschool opportunities equal when mother's education is considered, or when the quality of the different programs is accounted for, or when children aged three as well as four are included. Furthermore, Head Start funding is so limited that it precludes serving most of the eligible population, and public preschool

program coverage varies greatly from state to state. Thus many opportunities exist for expanding preschool, but the form of that expansion is critical, as we discuss below.

In addition, broader questions might be raised about the extent to which current preschool programs integrate social groups. Given the separation of children in Head Start and other compensatory programs, preschool programs do not appear to be structured so as to allow disadvantaged children to benefit from long-term exposure to other children. And where preschool programs are tied to local public schools, residential patterns may also limit socioeconomic integration.

### **Preschool Outcomes and Social Mobility**

Preschool may enhance social mobility if it affects children of different races or income levels in different ways. Based on the observed effects of preschool, one might expect increased social mobility across various domains. One domain is earnings: if preschool raises incomes most for those in the lowest earning deciles, then it may increase social mobility. As table 2 shows, model programs do yield reasonable earnings advantages of approximately \$30,000 (in current dollars), a little less than 10 percent of the lifetime earnings of a high school dropout. Current public programs, however, are not as effective as these model programs, and \$30,000 is the advantage compared to control groups with no preschooling (that is, it is the effect of the preschooling, not the difference in effect on earnings for different groups). The second domain is education, the focus of most research. Preschool does indeed raise achievement. However, current programs are unlikely to have strongly different effects on educational attainment for different groups of children.<sup>53</sup>

The effects of preschool in other domains, however, appear more conducive to social mobility. For example, disadvantaged children are more likely to engage in crime, be on welfare, and become teenage parents; they are also more likely to report ill health.<sup>54</sup> Here there is more scope for preschool to break the link between family behaviors and child outcomes.

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*In those areas where preschool may raise social mobility the most—criminal tendency, welfare receipt, and fertility—it may also benefit the children of the preschoolers.*

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For welfare participation, children may be “scarred” by their parents’ receipt of welfare: family receipt of welfare may cause poorer labor market outcomes, break down social norms against welfare support, or increase awareness of welfare eligibility, all of which would perpetuate welfare dependency for individuals and within families. Researchers cannot precisely identify welfare heritability, but they generally find that when parents, particularly African American women, receive welfare, their children are more likely to receive welfare.<sup>55</sup> Preschool programs may therefore raise social mobility by reducing welfare reliance heritability, although the size of the effect is questionable (not least because welfare is increasingly time limited).

Recent evidence also indicates reasonably strong “heritability” of criminal activity, particularly for men. Among noncriminals, 6

percent have fathers who were arrested; among criminals the figure is 15 percent. In the specific case of partner violence, the National Youth Survey shows a strongly positive correlation between family violence and later partner violence.<sup>56</sup> A full meta-analysis, however, finds that “violent origins have only a weak-to-moderate effect on the risk of later partner violence.”<sup>57</sup> Most families report zero crime by the parent and zero crime by the offspring. This means that the second-generational elasticity of crime is hard to estimate. Given the limited number of families that appear to transmit crime from one generation to another, preschool’s overall effects on this link cannot but be small. But to the extent that crime rates are much higher in some communities than others, preschool programs might have more of an equalizing effect by reducing crime rates in higher-crime-rate communities.

Preschool may have its strongest differential effect on fertility. The first-generation effect is to reduce teenage parenting, which is correlated with low economic well-being.<sup>58</sup> Given that teenage parenting rates are higher for women with low education and low income and for African American and Hispanic women, preschool should have relatively greater benefits for poor and minority children.<sup>59</sup> (Women who participated in the Perry Preschool program as children were also considerably less likely to have an abortion, suggesting that preschool enhances parenthood planning.) There may also be second-generation effects.

### **Second-Generation Effects of Preschool**

In those areas where preschool may raise social mobility the most—criminal tendency, welfare receipt, and fertility—it may also benefit the children of the preschoolers. Given the diffuse benefits of preschool, and

the reasonably strong heritability of behaviors and circumstances, these second-generation effects may be a key to social mobility.<sup>60</sup>

The effects on fertility and crime, in particular, may spill over into the second generation. Research has documented that teenage parenting and single parenting adversely affect children's attainment.<sup>61</sup> Children of teenage parents are much less likely to graduate from high school, and a child in a two-parent family accumulates on average 0.43 more years of schooling than a child in a single-parent family.<sup>62</sup> Given conventional estimates of the returns to a year of education, the benefits from residing in a two-parent household are the equivalent of a 2–4 percent increase in annual earnings. Two-parent family status and smaller family size also reduce criminal activity, while children of teenage parents are more likely to engage in crimes such as assault.<sup>63</sup> The effects appear to be significant, if only because any reduction in criminal activity conveys substantial economic benefits.

Other second-generation effects are probably weaker. There may be some effect on second-generation earnings, to the extent that preschool weakens the link between parents' and children's incomes.<sup>64</sup> Finally, preschool may affect educational attainment across generations. Both mother's and father's education are statistically significant influences on a child's graduation and years of schooling.<sup>65</sup> One extra year of parental schooling is associated, on average, with 0.29 years of offspring attainment.<sup>66</sup>

Although these arguments are plausible, there is no direct evidence on the benefits to subsequent generations from either state or model preschool programs. (Because the sample sizes in the model programs are so small, it is typically not possible to identify

second-generation effects.)<sup>67</sup> Moreover, because such benefits would be a long time in the future, they would need to be discounted (valued less relative to immediate benefits). Applying a social discount rate of 3.5 percent, we find that any monetary gain for a child is worth half that of a gain in the same domain to the actual participant. So, even with perfect heritability, the effects on social mobility are half as strong for the second generation.

In summary, there is some evidence that direct and indirect heritability effects are significant, though there is insufficient research from which to generalize to an anticipated effect of participation in early childhood education programs. A recent simulation model, however, suggests that these effects are meaningful.

Diego Restuccia and Carlos Urrutia generate a four-period model of parent-child investments to determine social mobility across generations, contingent on increased public spending on elementary and secondary education, and separately, on higher education.<sup>68</sup> In their policy simulations, they find that increased spending on elementary and secondary education (which can include prekindergarten and kindergarten) raises social mobility. The logic is relatively straightforward. Increased public spending on the early years of schooling—in the model, the increased spending is used for a universal program of preschooling for all children, regardless of family background—eases the burden of borrowing for educational investments for poorer families (although it also motivates some wealthier parents to switch from private to public schools). The children of poorer families will then go on to college, and although they will drop out at relatively high rates, the children who finish will increase the number of college graduates from low-

income backgrounds. In the model, intergenerational earnings and education correlations both fall as a result. Assuming an increase in public spending on early education of \$90 billion—sufficient to fund preschool for all children for approximately two years—earnings correlations across generations should fall from 0.40 to 0.36 (a perfect correlation would be 1, no correlation at all would be 0)

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*Because many low-income and minority children are already enrolled in Head Start and other programs, another way to raise social mobility would be to upgrade the existing program.*

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and education correlations across generations should fall from 0.35 to 0.28.

Relative to other educational investments in the model, these effects are substantial. Spending on higher education in the model, for example, has zero or even a negative effect on these earnings correlations: subsidies awarded to a college student do not greatly affect the student's ability to graduate from college.<sup>69</sup> However, in this model the spending on early education would do little to raise educational attainment (college enrollment and completion) for the lowest income quintile. Its main effect would be to equalize college enrollment rates for the three middle quintiles of family income.

### **Targeted or Universal Preschooling?**

The above discussion assumes a trend toward universal preschooling, or at least that any

program expansion would be distributed in the same way as the present system. In part, that assumption reflects widespread political support for universal programs and the practical challenges of more accurately targeting programs to the disadvantaged. A universal program should still reduce inequalities, because it benefits low-income and minority children more than it does advantaged children, but the effects (especially at current quality levels) on relative socioeconomic position may not be strong.

In theory, programs targeted at the most disadvantaged children would increase social mobility the most. A targeted program would obviously generate benefits for those who enrolled. Indeed, existing public preschool programs do raise social mobility. But many children who would enroll in a new targeted program would either be white non-Hispanic or Hispanic or be in the lower-middle quartile of income distribution. Thus Hispanic children might gain more than African American children (who have much higher preschool participation rates), and children in poverty would not benefit much more than children in families with higher but still modest incomes. Moreover, it may not be easy to identify the enrollees who might benefit most from a targeted program (particularly children of mothers who are high school dropouts) and exhort them to participate.<sup>70</sup> Screening, regulating, and monitoring eligibility would also raise unit costs. With imperfect targeting, many disadvantaged children would miss out on programs. If the challenges of targeting could be overcome, however, social mobility effects might be greater.

Because many low-income and minority children are already enrolled in Head Start and other programs, another way to raise social mobility would be to upgrade the exist-

ing program. Janet Currie and Matthew Neidell have found that increased spending on Head Start does appear to enhance outcomes.<sup>71</sup> Also, state programs (most of which are funded at rates below Head Start) might be upgraded. Here the challenge is to get sufficient resources for high-quality targeted programs. Another option is to expand Head Start and state programs to serve all children for two years, which would generate stronger effects. At present most children attend such programs for only one year.

The dilemma is the old efficiency-equity trade-off. A targeted program would have a greater impact on social mobility, but it would not generate as high a public return on investment as a universal program.<sup>72</sup> If a program targeted to the lowest quintile is only 50 percent accurate—that is, if half of the participants are not from the lowest quintile—then it would generate smaller returns than a universal program (even as the average benefits from such a program would be significantly lower). Universal programs are also much more likely to garner political support, as well as generate spillover benefits such as better school discipline. And any fiscal savings these programs yield will be passed on to taxpayers. Thus a useful strategy for increasing social mobility might be to target within a universal system by providing more intensive programs, with smaller classes and longer hours, to disadvantaged children. However,

the amount of extra resources needed to yield sufficient social mobility cannot be easily specified.

## **Conclusions**

U.S. preschool programs are effective across a wide set of outcomes. But participation rates are lower for children with lower incomes and low parental education, for Hispanics, and for those residing in the western states than for other children. Together, these facts suggest that increased investment in preschool could raise social mobility. Program expansions targeted to disadvantaged children would help them move up the ladder, as would a more universal set of policies from which disadvantaged children gained disproportionately. Increasing the educational effectiveness of these programs would provide for greater gains in social mobility than would increasing participation rates alone. At the same time, expectations of what can be accomplished on this front should be modest.

Under current policies, preschool participation rates are not vastly different across races and income levels. Future expansions may end up serving all children, not just the poorest. In this scenario, society as a whole would gain. Benefits would exceed costs, and there would be more economic growth and thus more upward mobility, but not necessarily substantially greater opportunities for those at the bottom of the economic ladder.

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67. Perry Preschool program participants had an average of 2.4 children by age forty-two. There are data on whether the first or second child has ever been arrested, repeated a grade, or been on welfare, and if the child is currently employed. There is no clear evidence of offspring advantages across these dimensions. However, sample sizes are very small.
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# U.S. Elementary and Secondary Schools: Equalizing Opportunity or Replicating the Status Quo?

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*Cecilia Elena Rouse and Lisa Barrow*

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## Summary

Although education pays off handsomely in the United States, children from low-income families attain less education than children from more advantaged families. In this article, Cecilia Elena Rouse and Lisa Barrow investigate why family background is so strongly linked to education.

The authors show that family socioeconomic status affects such educational outcomes as test scores, grade retention, and high school graduation, and that educational attainment strongly affects adult earnings. They then go on to ask why children from more advantaged families get more or better schooling than those from less advantaged families. For low-income students, greater psychological costs, the cost of forgone income (continuing in school instead of getting a job), and borrowing costs all help to explain why these students attain less education than more privileged children. And these income-related differences in costs may themselves be driven by differences in access to quality schools. As a result, U.S. public schools tend to reinforce the transmission of low socioeconomic status from parents to children.

Policy interventions aimed at improving school quality for children from disadvantaged families thus have the potential to increase social mobility. Despite the considerable political attention paid to increasing school accountability, as in the No Child Left Behind Act, along with charter schools and vouchers to help the children of poor families attend private school, to date the best evidence suggests that such programs will improve student achievement only modestly.

Based on the best research evidence, smaller class sizes seem to be one promising avenue for improving school quality for disadvantaged students. High teacher quality is also likely to be important. However, advantaged families, by spending more money on education outside school, can and will partly undo policy attempts to equalize school quality for poor and nonpoor children.

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**I**n 1967 Martin Luther King Jr. wrote, “The job of the school is to teach so well that family background is no longer an issue.” As King’s remark suggests, Americans have long had high expectations for their educational system. One reason they demand so much from their schools is that education is closely linked both to income and to occupation. Better educated individuals earn more and work in more prestigious occupations. Indeed, because education affects both income and occupation, it is traditionally thought to be important in determining an adult’s socioeconomic status.

Figure 1 shows the relationship between years of completed schooling and annual earnings, using data from the March 2003 and 2004 Current Population Survey (CPS). On average, high school graduates with twelve years of schooling earn nearly \$26,000 a year, as against about \$19,000 for high school dropouts with only eleven years of schooling. Completing a high school degree is also a prerequisite for college admission, and the value of a college degree, particularly a four-year college degree, has increased sharply over the past twenty-five years. In 1979, adults with a bachelor’s degree or higher earned roughly 75 percent more each year than high school graduates. By 2003, their yearly earnings were more than double (2.3 times) those of high school graduates.<sup>1</sup>

Even if an individual does not intend to go on to college, a high school diploma is a minimum education requirement for many jobs. Although direct information on occupational requirements is not available, high school graduates in the 2004 CPS Outgoing Rotation Group data are more likely than high school dropouts to work in the highest-wage occupation groups—management, architec-

ture and engineering, computers, and the law. For example, 7.1 percent of adults aged twenty-five to sixty-five who have completed high school, but no college, work in one of those occupation groups, as against only 2.6 percent of adults who dropped out of high school. Conversely, 26 percent of high school dropouts work in the lowest-average-wage occupational groups—food preparation and service; farming, fishing, and forestry; and building and grounds cleaning and maintenance—compared with 11.5 percent of high school graduates.<sup>2</sup>

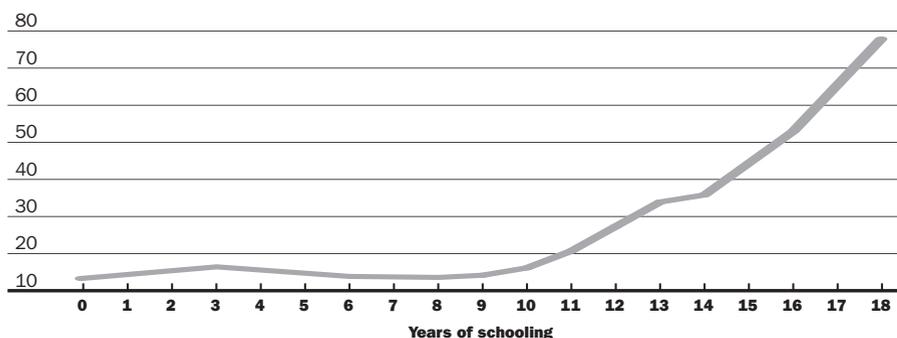
Education is thus an important driver of upward mobility in the United States. But as we document below, America’s schools fail to fulfill King’s vision. A U.S. child’s educational attainment is strongly linked to his or her family background, and children of parents of low socioeconomic status are likely as adults to have the same socioeconomic status as their parents. In this article we investigate why family background is so important in determining a child’s educational attainment, as well as how the nation’s K–12 educational system perpetuates this pattern.

## **How Family Background Affects Educational Attainment**

Theoretically if everyone, rich or poor, faces the same cost and reaps the same benefit from additional schooling, educational attainment should not differ by family background. In the real world, however, years of schooling completed, and educational achievement more generally, vary widely by family background. To illustrate we turn to data from the National Education Longitudinal Study (NELS) of 1988, which followed more than 20,000 eighth graders from 1988 through 1994 (for many, their sophomore year of college). This survey has rich information both about the educational experiences of the stu-

**Figure 1. Average Annual Earnings, by Years of Completed Schooling**

Average annual earnings (thousands of 2004 dollars)



Source: Authors' calculations from the Current Population Survey, March 2003 and 2004.

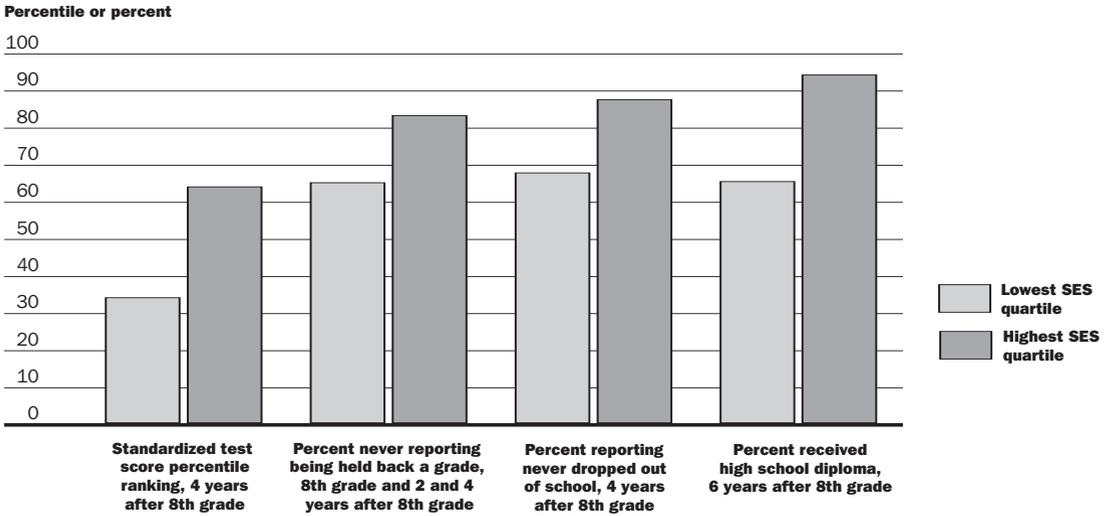
dents and about their parents and schools. Figure 2 shows how students' educational achievements vary by family background. We have divided the students' families into four even groups (quartiles) based on an index of socioeconomic status. Those in the lowest quartile are the most disadvantaged, while those in the highest quartile are the most advantaged. The average family income in the lowest quartile is about \$27,000 (in 2004 dollars), with an average family size of 4.6. In the second quartile the average family income is about \$48,000 (average family size of 4.4); in the third quartile it is about \$69,000 (average family size of 4.3); and in the fourth quartile it is nearly \$110,000 (average family size of 4.4).

As the figure shows, children from families in the highest quartile have higher average test scores and are more likely never to have been held back a grade than children from families in the lowest quartile. Children from families in the top quartile are also more likely never to drop out of high school, and therefore much more likely to have a high school diploma six years after they entered the eighth grade.

Although these patterns are striking, it is not clear they reflect the *causal* effect of family

background on a child's educational achievement. Inherited genetic ability confounds attempts to study the link between family background and educational achievement because to the extent that ability or intelligence is heritable, genetics helps determine whether children are successful in school. For example, evidence suggests that people with lower observed ability earn lower wages than those with higher ability.<sup>3</sup> Thus, less able people will have lower socioeconomic status than more able people. Further, more able people likely find it less costly to get more schooling, in the sense that it is easier for them to master the knowledge required at each new step of school than it is for an individual of similar background but with lower ability. If it is also true that ability is genetically determined, then less able parents whose socioeconomic status is low will also have less able children who will get less schooling than the children of more able parents whose socioeconomic status is high. In this example, the heritability of ability combined with the link between ability and educational achievement means that low innate ability explains both the parents' low socioeconomic status and the children's lesser educational achievement.

**Figure 2. Educational Outcomes, by Family Socioeconomic Status**



Source: Authors' calculations from the National Education Longitudinal Study of 1988.

To disentangle the effects of genetic makeup (which is not malleable) and family background (which is likely more malleable) on educational attainment, a researcher would ideally conduct an experiment. The experiment would begin with the random assignment of one group of children to disadvantaged families and another group to more advantaged families—without regard to the children’s “innate” ability. Because assignment to families would be random, there would be no link between the genetic ability of the children and that of the parents. On average the only difference between the two groups of children would be their family background. Years later the researcher could compare the educational attainment of these children. With a large enough sample, differences between the two groups would provide a credible estimate of how much family background causally affects educational attainment.

In this experiment what the researcher wants to control is the wealth (or socioeconomic status more generally) of the family in which the child was raised. The researcher does not

attempt to control which schools the children attended, whether the children had access to good medical care, their families’ parenting practices, or other aspects of their lives that undoubtedly affect their educational attainment. Why not? Because the researcher is not interested in the effect of randomly assigning students to families of different backgrounds, assuming that the families do everything else the same.

Another way to see this is to consider possible policy implications. Suppose a new public policy aiming to increase the educational attainment of children were to give \$10,000 to each family whose income fell below, say, the national poverty line. The policy’s intent would not be for parents to put the money into the bank and not spend it on their children. Rather, the intent would be for them to use the money to buy nutritious food, enroll their children in better schools, purchase supplementary educational materials, get access to better medical care, or purchase other materials that would help their children’s educational success. That is, the key policy

question is not whether wealth or social advantage affects educational attainment *per se*, but whether the behaviors and resources made possible by that wealth and social advantage affect educational attainment.

In a study that comes close to the ideal experiment just described, Bruce Sacerdote examines the educational attainment of children adopted from South Korea who were randomly assigned to U.S. adoptive families.<sup>4</sup> Because the children are adopted and randomly assigned to their families, there should be no relationship between the mother's innate ability and the child's innate ability; thus any relationship between the mother's educational attainment and that of the children is causal. Because many of these families also have biological children, Sacerdote compares the link between a mother's schooling and a child's schooling for adopted and biological children and estimates how much the mothers' educational attainment determines that of the biological children. He calculates that only 23 percent of schooling transmitted from mother to child is the direct effect of the mother's education, suggesting a very large role for genetics. In contrast, he finds that nurture plays a much larger role than nature in transmitting health habits such as drinking and smoking; these habits pass along to biological and adopted children at equal rates. Sacerdote, an economist, notes that under very strong assumptions his finding means that 23 percent of educational attainment is determined by environment, implying that up to 77 percent is determined by nature. Most psychologists who examine how genetics affects academic achievement in young children find smaller estimates, in the range of 30 to 40 percent.<sup>5</sup> Some also argue that adoption studies overstate the importance of genetics because adoptive families are not representative of families in the general population.<sup>6</sup>

Researchers have used other strategies to estimate the extent to which family income determines children's educational achievement. Again, because they cannot assume that family income is unrelated to other factors (such as inherited ability) that determine both children's socioeconomic status and their educational attainment, they must look for changes in family income that are unrelated to family

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*The key policy question is not whether wealth or social advantage affects educational attainment *per se*, but whether the behaviors and resources made possible by that wealth and social advantage affect educational attainment.*

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characteristics such as whether the parents are highly educated or have high genetic "ability." Pamela Morris, Greg Duncan, and Christopher Rodrigues take advantage of variations in family income caused by experimental welfare programs in the United States and Canada during the 1990s to examine how income affects children's achievement.<sup>7</sup> The welfare programs were all designed to increase work, and several were also designed to increase income, either through wage supplements or by allowing participants to keep more of their welfare payments when they went to work. Because no direct family or child services (such as parenting classes or child care subsidies) were provided, any changes in children's achievement must be attributable to changes in their parents' em-

ployment, income, and welfare receipt generated by random assignment to the different programs.

Morris, Duncan, and Rodrigues look at how these differences in income (all generated by random assignment) affect children's achievement. They find that a \$1,000 increase in annual income (over three to five years) increases achievement by 6 percent of a standard deviation for children who are two to five years old. However, it has no effect on achievement for older children (six to nine years old and ten to fifteen years old). The cost and benefit of the increased income for preschool-aged children compare favorably to the cost and benefit of direct educational interventions such as reducing class size. (In one experiment, Alan Krueger and Diane Whitmore Schanzenbach find that class-size reductions costing \$9,200 per pupil for grades K–3 increased children's achievement by 13 percent of a standard deviation.)<sup>8</sup>

Addressing the question of how changes in family income affect children's academic attainment in yet another way, Gordon Dahl and Lance Lochner use the fact that increases over the past twenty years in the earned income tax credit for working families have caused increases in family income to examine how child achievement is affected.<sup>9</sup> Families with two children with earned income of, say, \$10,000 in 1993 would have been eligible for a tax credit of \$1,511. That same family would have been eligible for a credit of \$2,528 in 1994 and \$3,110 in 1995. Thus with no change in nominal earned income, total family income would have increased each year. Did the added money improve student test scores?

Dahl and Lochner find that it did. A \$1,000 increase in income raised math and reading scores by 2 to 4 percent of a standard deviation—

an improvement large enough to close roughly 3 to 5 percent of the achievement gap between children in the bottom income quartile (average family income of \$14,214 in 2000 dollars) and those in the top quartile (average income \$81,137).<sup>10</sup> Furthermore, when Dahl and Lochner estimate how income affected test scores for various subgroups, they find even larger effects for children from disadvantaged families, who are more likely to receive the maximum increase in income.

Overall, the evidence suggests that parental socioeconomic status has a causal effect on children's educational outcomes. But the studies noted cannot identify precisely how increases in parental education or income improve children's educational outcomes. Economic theory suggests that people stay in school until the costs of doing so (direct costs as well as forgone earnings and the psychological costs of being in school) outweigh the benefits. Thus, if the children of advantaged families stay in school longer, it must be because they receive greater benefits or face lower costs than do less advantaged children (for example, forgone earnings are less important to a wealthy family than to a poor family). In the next sections, we investigate why the relationship between family background and educational attainment may be so strong.

### **Does the Economic Value of Education Differ by Family Background?**

We first examine whether education has a different value for people of different socioeconomic backgrounds. If children from more advantaged families receive larger gains from each additional year of schooling, they will have a greater incentive to stay in school. Because research on the economic value of edu-

cation is extensive, while that on the extent to which that value varies by family background is more limited, we begin by discussing the overall relationship between education and income.

### Estimating the Economic Value of Schooling Is Not Straightforward

Economists conventionally measure the economic value of additional schooling (or the “return to schooling”) as the average percentage difference in mean earnings for each additional year of education.<sup>11</sup> Estimates based on the Current Population Survey, for example, suggest that on average for each year of schooling, a person’s earnings increase by about 11 percent.<sup>12</sup> While the economic value of education has been well documented, the question of why education increases income is more controversial. Nobel Laureate Gary Becker theorizes that education provides skills, or human capital, that make a worker more productive.<sup>13</sup> If so, then because a worker’s income reflects his or her productivity, education is a key determinant of upward social mobility. It follows that much of the gap between the rich and the poor arises from a lack of skills among the poor—with the policy implication being that education and training should form the cornerstone of programs aimed at reducing income inequality.

Other researchers, such as Nobel Laureate Michael Spence, argue that education may not *generate* higher incomes—that is, the relationship may not be causal.<sup>14</sup> Instead, education and income may be linked because people with greater “ability” complete more schooling and would likely earn higher wages and salaries even without the additional schooling. In this case, as with the relationship between family socioeconomic status and a child’s educational attainment, the

schooling-income connection may mostly reflect the fact that more able people command a premium for their (innate) skills in the labor market. Thus empirical estimates of the return to schooling such as the one just noted are too large. In this view, increasing funding for educational programs for the disadvantaged will have little or no effect because schooling cannot change innate ability.

Again, researchers have developed several methods to isolate the economic value of education in an effort to disentangle these two hypotheses. To determine definitively whether more schooling raises income, an ideal experiment would involve randomly assigning one group of students to complete high school and another group to drop out, regardless of the students’ innate ability or family background. Years later researchers would compare how the two groups fared in the labor market. On average the only difference between the two would be whether they had graduated from high school. Differences in the earnings of the two groups would provide an estimate of the economic value of education—how much completing high school causes earnings to increase. To determine whether this economic value varies by family background, the researcher could simply estimate the earnings difference for subgroups of students based on their family background at the start of the experiment.

### Empirical Estimates of the Economic Value of Schooling

Recognizing that no such experiment will ever be conducted, researchers have developed two broad approaches to empirical estimation of the economic value of education. The first approach—so-called natural experiments—locates events or policies that might be expected to alter the schooling decisions of some people, but would not be expected to

alter their income independently. The idea is straightforward. Suppose that researchers knew of an event or policy, such as an increase in the compulsory schooling age, that would increase a group's years of completed schooling. Suppose, further, that they were certain that the policy would have no direct effect on the group's earnings. They would then estimate the effect of education on earnings in two steps. First, they would esti-

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*The findings of all these empirical studies . . . are surprisingly consistent: the return to schooling is not caused by an omitted correlation between ability and schooling.*

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mate how much the policy increased the group's educational attainment. Next, they would measure how much the same policy affected their earnings. If they find that the group's earnings have increased, they can be sure that education caused the increase because they are certain the policy had no *direct* effect on earnings. The ratio of the increase in income to the increase in schooling is an estimate of the economic value of education. Many such studies estimate that the return to schooling is at least as large as estimates by conventional procedures that relate the level of schooling to income directly.<sup>15</sup>

Other researchers have used sibling or twin pairs to estimate empirically the return to schooling. Because siblings and twin pairs share genetic material and are raised in similar household environments, their "ability"

and other unobservable characteristics are much more similar than those of randomly selected members of the population. As a result, when researchers relate differences in siblings' schooling to their earnings, they implicitly account for these unobserved factors. Although the estimated return to schooling varies because of the widely different time periods covered by the studies, the various sibling and twin studies find a significant link between schooling and earnings.<sup>16</sup> Further, the more recent and more sophisticated estimates typically do not differ from conventional estimates of the return to schooling.<sup>17</sup>

The findings of all these empirical studies—those using natural experiments and those using family relationships—are surprisingly consistent: the return to schooling is not caused by an omitted correlation between ability and schooling. A conventional estimate of the economic value of education is thus likely to be quite close to that of the ideal experiment. In fact Nobel Laureate James Heckman, writing with Pedro Carneiro, concludes, "By now there is a firmly established consensus that the mean rate of return to a year of schooling, as of the 1990s, exceeds 10 percent and may be as high as 17 to 20 percent."<sup>18</sup>

### **Do Differences in the Value of Education Explain Differences in Educational Attainment?**

Although researchers consistently find that education has a causal effect on earnings—that education has economic value—they have not come to a consensus on whether that value varies depending on an individual's family background. Importantly, they have not established whether people from more advantaged families complete more schooling because it has greater value for them. One study, for example, concludes that individuals

with higher “ability” or from more advantaged families do not enjoy greater returns to schooling.<sup>19</sup> Other studies find no variation in the returns to schooling by the race or ethnicity of the individual, or by IQ.<sup>20</sup> Still others, however, find higher returns to schooling for more able individuals.<sup>21</sup> Another important question is *why* the return to schooling might differ by family background. Differences in school quality, which we address below, provide one possible explanation.

### **Do the Costs of Education Differ by Family Background?**

Education has various costs, the most obvious of which is the direct cost. For the 90 percent of U.S. K–12 students who attend public school, these direct costs may be minimal, but parents must still pay for such school supplies as notebooks, pencils, paper, and the like.<sup>22</sup> Based on our estimates using data from the 2002 Consumer Expenditure Survey, families with children under age eighteen who are headed by a high school dropout spend roughly \$34 a year on school books and supplies, whereas families whose head has a graduate degree spend roughly \$85. These differences, however, are likely too small to generate significant differences in educational attainment.

Education also has psychological costs, information costs, opportunity costs, and borrowing constraints (the cost of obtaining funds). At the elementary and secondary levels, it is these costs that are likely to be important in explaining differences in schooling caused by family background.

#### **Differences in Psychological Costs**

Learning can be frustrating, and mastering new material and studying for tests can be time-consuming. Anything that increases these psychological costs for disadvantaged students

relative to their more privileged peers (that is, makes them dislike school more) may help explain why they get less schooling.

As one example, systematic differences in the expectations of parents and teachers may raise the psychological costs for less advantaged students. A child from a poorer family may face different expectations from parents and teachers than a child from a more privileged family, even if the two children have the same “ability.” If these different expectations, in turn, affect the children’s academic achievement, then expectations could be one reason why parental socioeconomic status affects schooling.

Data from the NELS indicate that more advantaged parents expect their children to complete more education than less advantaged parents do, although virtually all parents, regardless of socioeconomic background, expect their children to complete high school. If lower parental expectations cause children to have less confidence in their own ability, the children could face higher psychological costs. Although we are not aware of evidence that parental expectations causally affect children’s academic achievement, some evidence exists that teacher expectations affect both student intelligence and achievement.

Robert Rosenthal and Lenore Jacobson’s *Pygmalion in the Classroom* has been widely cited as providing just such evidence.<sup>23</sup> The authors administered a baseline intelligence test to elementary students in a single school and then randomly assigned 20 percent of the students to be identified as likely to show a dramatic increase in intelligence over the next school year because they were “late bloomers.” The remaining students served as the control group. Rosenthal and Jacobson

then told the teachers which students had been identified as late bloomers and later administered follow-up intelligence tests. They found that one and two years after being labeled, the late-blooming children had gained more IQ points than the control group. Rosenthal and Jacobson's study has spawned many more studies and has been much criticized, but a recent review of the research by

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*Findings from both economics and psychology suggest that teacher expectations may indeed help explain why family background affects student achievement.*

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Lee Jussim and Kent Harber concludes that teacher expectations do affect student intelligence, though the effects are likely small.<sup>24</sup>

A recent study by economist David Figlio also finds that teacher expectations affect academic achievement.<sup>25</sup> Starting with the assumption that teachers' perceptions of a child's family background may be based on the child's name, Figlio assigns socioeconomic status rankings to student names. Because siblings' names are often assigned different rankings, Figlio can look for differences in treatment and outcomes among students with identical family background. He finds that teachers are more likely to recommend students with high-status names to gifted and talented programs than students with similar test scores but low-status names. In addition, using standardized test scores, he finds that children with low-status names score lower in

mathematics and reading than their siblings with higher-status names.

Findings from both economics and psychology suggest that teacher expectations may indeed help explain why family background affects student achievement. If teachers have lower expectations for children from disadvantaged families, regardless of their ability, and if their perceptions about which children are disadvantaged are on average correct, then the lower expectations for disadvantaged children may raise the psychological costs of education relative to their more privileged peers and thus help explain why children of disadvantaged parents attain less education.

Differences in social or cultural identity may also generate differences in the psychological costs of schooling. In other words, those who drop out may feel more peer or family pressure not to continue in school. Again, however, one might ask why these cultural or social norms about education vary systematically with socioeconomic status. Cultural norms may vary because education helps determine socioeconomic status, so that disadvantaged children may feel pressure not to raise their own status through education above the average for the social and cultural group with which they most identify.

### **Information Differences**

Another potential cost to completing more schooling is that of acquiring accurate information about the costs and benefits of more schooling. If students from more privileged families can get more or better information about the ramifications of their decision at a lower cost than those from poorer families (for example, a better understanding of the potential benefits to continuing in school, perhaps because of better family social networks), then they may get more schooling.

Similarly, students who drop out may believe that the returns to schooling are much riskier than do students who continue, thus lowering their expectations of the value of a high school diploma. High school dropouts may also discount the future income benefits of more education at a much higher rate than those who graduate from high school, also leading them to have lower expectations of the value of more education.

Although such arguments could explain why some students decide to drop out of high school in spite of the seemingly large economic benefits of continuing, one needs to ask why perceptions of risk or discount rates vary systematically with family background. Further, low-income students appear to understand the potential economic benefits of college attendance about as well as more advantaged students.<sup>26</sup> Although research is far from conclusive, it suggests that a simple asymmetry in students' understanding of the costs and benefits of schooling is unlikely to fully explain differences in educational attainment.<sup>27</sup>

### **Opportunity Costs and Borrowing Constraints**

Because students cannot work during the hours when they are attending school, they forgo income to attend school. In some families that income is a nontrivial share of family income. If instead the family could borrow money to allow the child to continue in school, then the increase in earnings from getting, say, a high school diploma would allow the family to repay the loan (and then some), assuming that interest rates are lower than the return to schooling. If credit markets are perfect—that is, if all families can borrow as much money as they need at the prevailing interest rate—then educational attainment should not vary by family background. If, however, poor families lack access

to competitive credit markets and would have to borrow money at much higher interest rates, then the cost of continuing in school is higher for them than for wealthier families who do not need to borrow the money (or who can borrow it at competitive rates). In this case, students from wealthier families will complete more schooling than those from poorer families.

Whether borrowing constraints more generally explain differences in educational attainment, especially college attendance, by family background is an unresolved issue.<sup>28</sup> There is, however, growing evidence from outside education that individuals, particularly teenagers, are credit constrained.<sup>29</sup> Further, racial and gender discrimination in credit markets has long been documented.<sup>30</sup> For example, researchers at the Federal Reserve Bank of Boston investigating racial discrimination in mortgage lending in the Boston area in 1990 found that the loan rejection rates of African American and Hispanic applicants were 8 percentage points higher than those of otherwise similar white applicants.<sup>31</sup> Although race is certainly correlated with socioeconomic status, we know of no direct evidence of discrimination by socioeconomic status.

Overall, the evidence suggests that differences in the cost of education may help explain differences in educational attainment by family background. As we will show, many of these cost differences are potentially driven by variation in school quality by family background, which may also lead to differences in the value of schooling.

### **Can Differences in School Quality Explain the Patterns?**

Finally, we consider whether differences in school quality help explain why more privi-

leged students complete more schooling than their less privileged counterparts. We begin by noting that the conventional measure of an individual's education—years of completed schooling—is rather limited. In particular, it ignores whether students with the same level of completed education may have received an education of different quality. By the conventional measure, completing one year of education should increase an individual's human capital by the same amount regardless of the school attended. But because one year at a poor school may increase human capital less than does one year at an excellent school, school quality could affect the value of education. It could also arguably affect the cost of education. A low-quality school, for example, may leave a student unprepared to master the skills of the next grade level, thus raising the costs in psychological terms (and also in time) of getting more education.

### **Does Family Background Affect the Quality of a Child's School?**

In the United States, the school a child attends is largely determined by the neighborhood where he or she lives. To the extent that parental socioeconomic status affects the neighborhood where a child lives, it may thus also affect school quality. For example, less privileged parents certainly have fewer financial resources than more privileged ones. While many forms of financial aid are available to low-income students who want to attend college, no such credit is available to low-income parents who want to live in a high-quality school district. These borrowing constraints likely cause school quality to vary by family background. If poor school quality leads to lower educational attainment, then children of less privileged parents will have lower educational attainment than children of more privileged parents.

At the school or school district level, some potential indicators of school quality are clearly related to family background or income (which, in turn, is correlated with family socioeconomic status). An obvious first question is whether overall school spending differs from one district to the next by the average socioeconomic status of the residents of the district. Higher-income school districts, after all, have more money to spend on education, and in theory more money should buy higher school quality. Using data from the 2003 Common Core of Data, we calculate average per pupil spending in school districts with at least 70 percent of students eligible for free or reduced-price school lunch and districts with less than 20 percent of pupils eligible.

Not surprisingly, we find that average spending per pupil is rather similar. Districts with the larger share of disadvantaged children spend an average of \$10,414 per pupil, as against \$9,647 for districts with a smaller share of such children. The similarity in spending in part reflects school finance reforms since the 1970s that have tried to equalize school funding across poor and rich districts. But similar total spending per pupil does not necessarily reflect similar school quality, because different school districts may face different costs. Older school districts with aging buildings, for example, may have to spend more to maintain their facilities than newer suburban districts do. Some districts may have more special education students, who need smaller classes, which means hiring more teachers. And urban districts may face higher-wage labor markets than rural districts. Indeed, the recognition that some groups of students may need extra money to compensate for family disadvantage underlies the goal of closing achievement gaps between high- and low-performing children in Title I of the Elementary and

Secondary Education Act of 1965 (of which the No Child Left Behind Act of 2001 is the most recent reauthorization.)

Given that instructional salaries and benefits make up more than 50 percent of schools' total current spending, class size could be another way in which school quality could vary by family background.<sup>32</sup> Because data on class size are not readily available, we look at pupil-teacher ratios instead. We have also calculated the average pupil-teacher ratios for schools by family socioeconomic background. As with total school spending, the pupil-teacher ratios are quite similar: 16.9 for schools attended by children of disadvantaged family background, as against 17.4 for schools attended by more privileged children.<sup>33</sup> Does the lower ratio in schools serving poor children mean that the quality of schooling is better in those schools? Such an interpretation is not likely to be correct because those schools may have a larger share of special education or English-language-learner students than schools serving more privileged children, which have fewer special education classrooms.<sup>34</sup>

One aspect of school quality that is less prone to distortion by compensatory education policies is teacher quality. Although a district may be able to raise salaries as an incentive to high-quality teachers, it cannot force such teachers to accept its job offers. One measure of teacher quality is teaching experience, and it is telling that schools serving poorer students are likely to have fewer experienced teachers. In this case, schools' socioeconomic status is defined by the percentage of students who are eligible for free or reduced-price school lunch. Eighty percent of teachers in low socioeconomic status schools (those in the top quartile by share eligible for free or reduced-price lunch) have more than

three years of experience, compared with 89 percent of teachers in high socioeconomic status schools (those in the bottom quartile by share eligible).<sup>35</sup>

Hamilton Lankford, Susanna Loeb, and James Wyckoff look in more detail at differences in teacher quality by student characteristics for the state of New York. They find that poor students are more likely than non-

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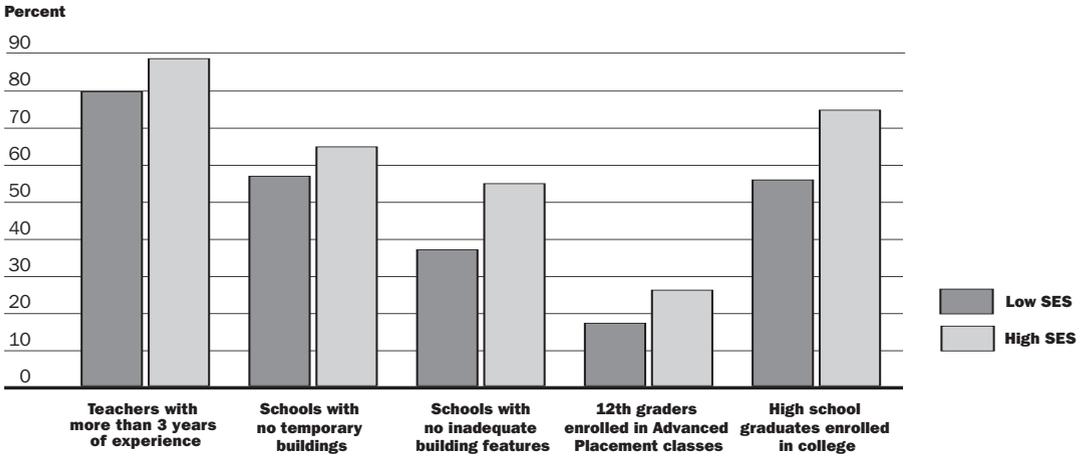
*One measure of teacher quality is teaching experience, and it is telling that schools serving poorer students are likely to have fewer experienced teachers.*

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poor students to have a teacher who is not certified in any subject that he or she is teaching (21 percent versus 16 percent), who failed a certification exam on the first attempt (28 percent versus 20 percent), or who attended a college ranked "least competitive" by *Barron's College Guide* (25 percent versus 24 percent).<sup>36</sup>

Schools also vary in facility and peer quality. As figure 3 shows, low socioeconomic status schools (those with 70 percent or more children eligible for free or reduced-price school lunch) have worse facilities than high socioeconomic status schools (those with fewer than 20 percent of students eligible for free or reduced-price school lunch). Fifty-seven percent of low socioeconomic status schools have no temporary buildings, as against 65 percent of schools serving high socioeconomic status students. Similarly, 37 percent

**Figure 3. School Quality, by Family Socioeconomic Status**



Source: Daniel P. Mayer, John E. Mullins, and Mary T. Moore, *Monitoring School Quality: An Indicators Report* (NCES 2001-030) (U.S. Department of Education, National Center for Education Statistics, 2000), figure 2.3 (<http://www.nces.ed.gov/pubs2001/2001030.pdf> [September 5, 2005]); T. D. Snyder, A. G. Tan, and C. M. Hoffman, *Digest of Education Statistics, 2003* (NCES-2005-025) (U.S. Department of Education, National Center for Education Statistics, 2004), table 101 (<http://www.nces.ed.gov/pubs2005/2005025.pdf> [February 26, 2005]).

of schools serving poor children (low socioeconomic status schools) have fully adequate building features, compared with 55 percent of schools serving nonpoor children (high socioeconomic status schools).<sup>37</sup>

Peer quality as measured by college enrollment rates and Advanced Placement courses is also lower for less privileged children. Data from the NELS show that low socioeconomic students (those with parents in the bottom quartile by socioeconomic status) attend schools in which only 56 percent of students go on to some college, as against 75 percent of students in schools serving high socioeconomic status students (those in the top quartile by socioeconomic status). The share of students taking Advanced Placement courses is 16.9 percent in schools attended by students with low socioeconomic status, compared with 26.2 percent for schools attended by high socioeconomic status students. In short, the peers of less privileged students are not as academically oriented as the peers of wealthier students.

Finally, we have found some evidence that school districts that are low in socioeconomic status may not spend resources as efficiently as districts with higher socioeconomic status, suggesting that they may be more poorly managed.<sup>38</sup> This finding, in combination with the descriptive data above (in figure 3), leads us to conclude that school quality varies according to parental socioeconomic status.

### Does School Quality Affect Children’s Educational Attainment?

The next question is whether these differences in school quality translate into worse outcomes for less privileged children. By the early 1990s, many people were convinced that once one took account of differences in family background, school resources—including money—did not matter for student achievement. In a 1996 article economist Eric Hanushek wrote, “Three decades of intensive research leave a clear picture that school resource variations are not closely related to variations in student outcomes and,

by implication, that aggressive spending programs are unlikely to be good investment programs unless coupled with other fundamental reforms.”<sup>39</sup>

Although Hanushek’s analyses of the effects of school resources on student achievement have been very influential, other researchers have criticized his findings on methodological grounds.<sup>40</sup> For example, one independent analysis of one of Hanushek’s studies concludes that the effect of per pupil spending on student achievement is large and educationally significant.<sup>41</sup> More recent studies that make explicit attempts to account for the compensatory nature of much educational expenditure also provide evidence that money matters. One of our own studies finds that the market values school spending in terms of property values. And Jonathan Guryan finds that a \$1,000 increase in per pupil spending in Massachusetts increases average test scores for fourth- and eighth-grade students by one-third to one-half of a standard deviation. Importantly, in summarizing the findings of seventeen federal studies, Geoffrey Borman and Jerome D’Agostino conclude that Title I of the Elementary and Secondary Education Act, which aims to provide additional funding to schools and districts serving disadvantaged students, has indeed improved the educational outcomes of children it has served. Further, in studying the effect of state efforts to equalize funding between wealthier and poorer school districts, David Card and A. Abigail Payne find that such reforms have narrowed gaps in spending as well as in educational outcomes.<sup>42</sup>

Whether money matters must depend in part on how the money is spent. Probably the best evidence to date on the effect of class size comes from the Tennessee Student-Teacher

Achievement Ratio experiment (known as Project STAR), the nation’s largest randomized experiment aimed at understanding how smaller class sizes affect student achievement.<sup>43</sup> In the 1985–86 school year some 6,000 kindergarten students in Tennessee were randomly assigned to one of three groups: small classes (13–17 students per teacher), regular-sized classes (22–25 students), and regular-sized classes with a

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*Peer quality as measured by college enrollment rates and Advanced Placement courses is also lower for less privileged children.*

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teacher’s aide. The experiment, ultimately involving some 11,600 students, lasted four years. After the third grade, all students returned to regular-sized classes.<sup>44</sup> The data have been analyzed by a variety of researchers, with a remarkably consistent finding: smaller classes result in higher student achievement.<sup>45</sup> One study finds that the class-size effects are larger for students eligible for free or reduced-price school lunch than for more well-to-do students. Another reports that the students who were (randomly) placed in smaller classes in grades K–3 performed better on standardized tests when they reached the eighth grade. They were also more likely to take a college entrance exam (such as the ACT or SAT)—a signal that they may have been more likely to attend college as well.<sup>46</sup>

Yet another study, by David Card and Alan Krueger, relating the quality of schooling received by people born between 1920 and

1949 to their earnings in 1979 found that a reduction in the pupil-teacher ratio of 10 students increased average earnings by 4.2 percent.<sup>47</sup> Other studies reviewed by these same authors in a later study find that reductions in pupil-teacher ratios are associated with increased average earnings, although several of the estimates are not statistically significant.<sup>48</sup>

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*Economic studies also broadly agree that teacher quality matters, though they agree much less about what makes a high-quality teacher.*

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Economic studies also broadly agree that teacher quality matters, though they agree much less about what makes a high-quality teacher.<sup>49</sup> Developing credible studies of the effects of particular teacher characteristics on student achievement is extremely difficult. Because teachers are not randomly assigned to schools, studies find ostensibly “better” teachers at schools attended by more advantaged students. Thus, as in other areas, the researchers can develop links between certain teacher characteristics and student outcomes but cannot be assured that the teacher characteristics *caused* the change in student outcomes. In addition, such studies typically rely on administrative data that do not contain many of the characteristics that likely make a good teacher, such as classroom management, motivation, professionalism, and a thorough understanding of how to communicate new concepts to students. That said, some studies have found that teachers improve greatly after one or two years of experi-

ence. If that finding is accurate, the fact that schools serving poorer students have more teachers with very little experience suggests that these students will have lower achievement as a result.

### **Does Improving School Accountability Improve Student Performance?**

Given already high levels of educational spending, policymakers are looking for ways to provide incentives for schools to improve without large increases in revenues. “School accountability” programs come in two forms.<sup>50</sup> Institutional school accountability programs, such as the No Child Left Behind Act of 2001, set up a system of rewards and sanctions determined by school performance—typically, student performance on standardized tests. Significantly, No Child Left Behind makes each school’s performance public. These reforms are popular because they are relatively inexpensive and because they aim to make school systems more transparent, so that parents can more readily compare their child’s school with others. Although research on the effects of school accountability on student achievement is growing, it is still fledgling.<sup>51</sup> At best, such programs generate small improvements in student achievement. At the same time, researchers have documented several unintended consequences. For example, one study estimates that teachers cheat in 4–5 percent of elementary school classrooms each year in Chicago and suggests that cheating increases when teachers have an incentive to do so, as they have with high-stakes tests.<sup>52</sup> Other researchers find that administrators reclassify low-achieving students as learning disabled so that the (presumably low) scores of these students will not be included in the school’s average test score calculation.<sup>53</sup> David Figlio reports that schools are more likely to suspend students during the testing

cycle, apparently to alter the composition of the testing pool. Brian Jacob finds some evidence that teachers focused more on the high-stakes test material than on the low-stakes test material following the introduction of Chicago's school accountability system.<sup>54</sup>

Another potential form of accountability is through the market. Because students are assigned to schools based on their neighborhood, many observers have argued that local public schools are not required to be accountable to local citizens. Thus, if parents could "vote with their feet," competitive pressure and the threat of losing students would force such schools to improve. Two often talked-about forms of competitive pressure are charter schools—public schools that are exempt from many of the regulations that apply to traditional public schools—and school vouchers for use at private schools. Both forms of competition would give parents alternatives to the local public school, thus presumably improving both the educational achievement of their children and the quality of the local public schools. Importantly, because the accountability is enforced by parental choices rather than the rules of a system, there is less scope for the unintended consequences noted above.

Although these arguments are theoretically persuasive, there is little empirical evidence that either charter schools or school vouchers improve student test scores (which should, in turn, improve educational attainment). For example, three sets of researchers, using statewide data from North Carolina, Florida, and Texas, respectively, have studied whether students who attend charter schools have higher test score gains than students in local public schools.<sup>55</sup> Their findings are remarkably similar: there are no achievement gains for students who attend charter schools, even

after controlling for a rich set of student characteristics. In fact, the students in charter schools appear to perform worse, perhaps because these are often new schools.

Evidence on school vouchers is also decidedly mixed. The best-designed study of school vouchers was conducted by William Howell and Paul Peterson in New York City, beginning in 1997.<sup>56</sup> It randomly assigned 1,300 students to two groups. One group received a (privately funded) scholarship to attend a private school; the other, control, group did not. After three years, the study found that overall there were no test score gains among the students who were offered a voucher or among the students who actually took advantage of the voucher offer and attended private schools. Howell and Peterson reported educationally large and statistically meaningful gains among African American students, but their findings have been disputed in a reanalysis of the data by Krueger and Pei Zhu.<sup>57</sup>

Evidence from publicly funded voucher programs in Milwaukee and Cleveland does not help to clarify the issue. One study of Milwaukee's Parental Choice Program, the oldest publicly funded choice program in the United States, suggests that students gained in math but not in reading; another suggests no gains in either math or reading.<sup>58</sup> The most recent evidence from the Cleveland Scholarship and Tutoring Program suggests that vouchers have not significantly benefited the recipient students.<sup>59</sup> After five years the test scores of voucher students are generally quite similar to those of a group of students who applied for, but did not receive, a voucher.

Importantly, all these studies examine small-scale programs. None addresses the question

of whether a large-scale program would generate enough competitive pressure on the public schools to induce them to improve. Evidence from Florida's school accountability system (which includes a school voucher for students attending persistently "failing" schools) suggests that even the threat of losing students through vouchers may not be a prime motivator for school improvement.<sup>60</sup> Although schools faced with the possibility of

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*Rather than encouraging upward mobility, U.S. public schools tend to reinforce the transmission of low socioeconomic status from parents to children.*

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becoming voucher-eligible appear to improve slightly, such improvement appears to spring from avoidance of the stigma of being labeled a failing school rather than the threat of vouchers per se.

Although these studies are not likely to be the last word on the effectiveness of institutional school accountability systems, charter schools, or school vouchers, together they indicate that the gains from improving school accountability are likely modest, at best.

## Conclusions

While efforts such as Title I and state school finance equalizations have succeeded in smoothing school spending across school districts serving more and less advantaged students, they have not eliminated the link between socioeconomic status and educational outcomes. Family background continues to

play an important role in determining a child's educational attainment. The costs and benefits of getting further schooling differ according to the socioeconomic status of a child's family, and these differences may be driven by differences in access to quality schools. Because school attendance boundaries are largely determined by neighborhood of residence and because families of different socioeconomic backgrounds live in different neighborhoods, children from more and less advantaged backgrounds attend different schools. Descriptive statistics and more sophisticated analyses find that school quality is positively correlated with family background. Children from well-to-do families attend better schools than children from poor families. As a result, rather than encouraging upward mobility, U.S. public schools tend to reinforce the transmission of low socioeconomic status from parents to children.

Policy interventions aimed at improving school quality for children from disadvantaged families thus have the potential to increase social mobility by reducing the transmission of low socioeconomic status from parents to children through education. Based on the best research evidence, smaller class sizes seem to be one promising avenue for improving school quality for disadvantaged students. Maintaining teacher quality at the same time is also likely to be important. These are but two of the many avenues that growing evidence shows are effective in raising school quality. Smaller schools, grade retention, and summer school are examples of others.<sup>61</sup> Despite the considerable political attention paid to charter schools and vouchers that would help the children of poor families attend private school, to date the best evidence suggests that increasing competitive pressure in this way will not significantly improve student achievement. In contrast,

growing evidence suggests that institutional accountability systems may generate small improvements in student achievement, although they are also vulnerable to unintended negative consequences.

Because a child's educational achievement depends on so many aspects of his or her life, many of which are outside school, education policy can go only so far. One particular challenge is that more advantaged families can afford to—and will—spend more on their children's education. Thus, these families can partly undo policy attempts to equalize school quality for poor and nonpoor children

by spending more money outside school. As an example, based on data from the 2002 Consumer Expenditure Survey, parents who drop out of high school spend an average of \$33 a year for recreational lessons or other instruction for children (not including tuition), whereas parents who have graduate degrees spend nearly \$600. Under these circumstances, it will be extremely difficult for America's public schools to live up to Martin Luther King Jr.'s ideal of teaching students so well as to make their family background irrelevant. That said, such lofty goals are a standard by which to measure our efforts. We are reminded that we have a long way to go.

## Notes

1. Based on authors' calculations using March Current Population Survey data available from Unicon. We limit the sample to individuals twenty-five to sixty-five years of age who worked at least one week in the past year.
2. Based on authors' calculations using 2004 Current Population Survey March Outgoing Rotations Group data available from Unicon. We limit the sample to individuals aged twenty-five to sixty-five, omitting those with wages of less than one-half of the minimum wage or above the 99th percentile of the wage distribution.
3. See, for example, Derek Neal and William R. Johnson, "The Role of Pre-Market Factors in Black-White Wage Differences," *Journal of Political Economy* 104, no. 5 (1996): 869–95; and Orley Ashenfelter and Cecilia Elena Rouse, "Income, Schooling, and Ability: Evidence from a New Sample of Twins," *Quarterly Journal of Economics* 113, no. 1 (1998): 253–84.
4. Bruce Sacerdote, "What Happens When We Randomly Assign Children to Families?" Working Paper 10894 (Cambridge, Mass.: National Bureau of Economic Research, 2004).
5. See William T. Dickens, "Genetic Differences and School Readiness," *Future of Children* 15, no. 1 (2005): 55–69.
6. See Mike Stoolmiller, "Implications of the Restricted Range of Family Environments for Estimates of Heritability and Nonshared Environment in Behavior-Genetic Adoption Studies," *Psychological Bulletin* 125, no. 4 (1999): 392–409.
7. Pamela Morris, Greg J. Duncan, and Christopher Rodrigues, "Does Money Really Matter? Estimating Impacts of Family Income on Children's Achievement with Data from Random-Assignment Experiments," unpublished manuscript, MDRC and Northwestern University, 2004.
8. Alan B. Krueger and Diane M. Whitmore, "The Effect of Attending a Small Class in the Early Grades on College Test Taking and Middle School Test Results: Evidence from Project STAR," *Economic Journal* 111 (2001): 1–28. This calculation assumes that per pupil costs increase 47 percent per year for 2.3 years, on average, and that per pupil costs equal the average U.S. total expenditure per pupil in average daily attendance in 1997–98 in 2001–02 dollars (\$8,487). *Digest of Education Statistics 2003*, table 166.
9. Gordon B. Dahl and Lance Lochner, "The Impact of Family Income on Child Achievement," Working Paper 11279 (Cambridge, Mass.: National Bureau of Economic Research, 2005).
10. Based on calculations by the authors using data received through personal correspondence with Dahl.
11. As Jacob Mincer shows, if forgone earnings are the only cost of school attendance, this is the private marginal benefit (or "return") to the investment in a year of schooling. See Jacob Mincer, *Schooling, Experience, and Earnings* (Columbia University Press, 1974).
12. Based on a regression of the natural logarithm of hourly wages on years of completed education, a quadratic in potential experience controls for sex, race/ethnicity, marital status, and nine regions using the 2004 March Current Population Survey. The regression was weighted using the earnings weight.
13. Gary Becker, *Human Capital* (Columbia University Press, 1964).
14. Michael Spence, "Job Market Signaling," *Quarterly Journal of Economics* 87, no. 3 (1973): 355–74.

15. For example, Joshua D. Angrist and Alan B. Krueger, "Does Compulsory Schooling Affect Schooling and Earnings?" *Quarterly Journal of Economics* 106, no. 4 (1991): 979–1014; Thomas J. Kane and Cecilia Elena Rouse, "Labor Market Returns to Two- and Four-Year Colleges," *American Economic Review* 83, no. 3 (1993): 600–13; Jeffrey Kling, "Interpreting Instrumental Variables Estimates of the Returns to Schooling," *Journal of Business and Economic Statistics* 19, no. 3 (2001): 358–64; David Card, "Using Geographic Variation in College Proximity to Estimate the Return to Schooling," Working Paper 4483 (Cambridge, Mass.: National Bureau of Economic Research, 1993); and Philip Oreopoulos, "Average Treatment Effects of Education When Compulsory School Laws Really Matter," *American Economic Review* (forthcoming). Angrist and Krueger use an individual's quarter of birth as the natural experiment; Kane and Rouse, Card, and Kling use proximity to a two- or four-year college as the natural experiment.
16. For studies using siblings, see, for example, Orley Ashenfelter and David Zimmerman, "Estimates of the Returns to Schooling from Sibling Data: Fathers, Sons, and Brothers," *Review of Economics and Statistics* 79, no. 1 (1997): 1–9; and Joseph Altonji and Thomas Dunn, "The Effects of Family Characteristics on the Return to Education," *Review of Economics and Statistics* 78, no. 4 (1996): 692–704. For studies using twins, see Jere R. Behrman, Mark R. Rosenzweig, and Paul Taubman, "Endowments and the Allocation of Schooling in the Family and in the Marriage Market: The Twins Experiment," *Journal of Political Economy* 102, no. 6 (1994): 1131–74; Orley Ashenfelter and Cecilia Elena Rouse, "Income, Schooling, and Ability: Evidence from a New Sample of Twins," *Quarterly Journal of Economics* 113, no. 1 (1998): 253–84; and Cecilia Elena Rouse, "Further Estimates of the Economic Return to Schooling from a New Sample of Twins," *Economics of Education Review* 18, no. 2 (1999): 149–57.
17. Unfortunately, the measurement error in reported schooling poses an econometric challenge for these models. The reason is that classical measurement error is exacerbated in within-sibling (or within-twin) estimators because sibling education levels are so highly correlated. Zvi Griliches, "Estimating the Returns to Schooling: Some Econometric Problems," *Econometrica* 45, no. 1 (1977): 1–22. As a result, much of the more recent literature using this approach has focused on addressing the measurement error bias as well as the ability bias.
18. Pedro Carneiro and James J. Heckman, "Human Capital Policy," in *Inequality in America: What Role for Human Capital Policies?* edited by Benjamin M. Friedman (MIT Press, 2003), pp. 148–49.
19. Ashenfelter and Rouse, "Income, Schooling, and Ability" (see note 16).
20. Lisa Barrow and Cecilia Elena Rouse, "Do Returns to Schooling Differ by Race and Ethnicity?" *American Economic Review* 95, no. 2 (2005): 83–87; and Altonji and Dunn, "The Effects of Family Characteristics" (see note 16).
21. John Cawley and others, "Understanding the Role of Cognitive Ability in Accounting for the Recent Rise in the Economic Return to Education," in *Meritocracy and Economic Inequality*, edited by Kenneth Arrow, Samuel Bowles, and Steven Durlauf (Princeton University Press, 2000), pp. 230–65; Carneiro and Heckman, "Human Capital Policy" (see note 18); and Christopher Taber, "The Rising College Premium in the Eighties: Return to College or Return to Unobserved Ability?" *Review of Economic Studies* 68, no. 3 (2001): 665–91.
22. U.S. Department of Education, National Center for Education Statistics, *The Condition of Education 2005*, NCES-2005-094 (2005), appendix I, table 2-2, "Trends in Private School Enrollments."

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# The Role of Higher Education in Social Mobility

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*Robert Haveman and Timothy Smeeding*

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Most Americans expect the nation's colleges and universities to promote the goal of social mobility to make it possible for anyone with ability and motivation to succeed. But according to Robert Haveman and Timothy Smeeding, income-related gaps both in access to and in success in higher education are large and growing. In the top-tier colleges and universities, almost three-quarters of the entering class is from the highest socioeconomic quartile. The pool of qualified youth is far greater than the number admitted and enrolled; hence America's top colleges could enroll more moderate- and low-income students without lowering their selection standards.

Higher-income parents make enormous efforts to ensure their children's academic success, while children of poor parents begin the "college education game" later and with fewer resources. Students in poor and minority neighborhoods are less well prepared academically; ill prepared to select colleges, apply for admission, and secure acceptance; and poorly informed about the cost of attending college and the availability of needs-based financial aid. Sharply rising college prices during the 1980s and 1990s, together with the growing inequality of family income, have raised the cost of attending college far more for low-income students than for well-to-do students. Financial aid has risen more slowly, and the share targeted on low-income students has been falling.

The authors offer bold policy recommendations to increase educational opportunities for low- and middle-income students. These involve the development of financing structures that will increase access for students from lower-income families. Public institutions could price tuition close to real costs and use added revenues to provide direct student aid for students from low-income families. Federal subsidies to students who attend wealthy institutions could be capped, with the savings redirected to students attending less well-endowed schools, both public and private. Finally, federal and state governments could redirect to lower-income students the financial support they now provide colleges and universities.

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**M**edian income in 2000 for Americans with a bachelor's degree or higher was more than double that for high school graduates.<sup>1</sup> By 2010, 42 percent of all new U.S. jobs are expected to require a postsecondary degree.<sup>2</sup> Tomorrow, even more than today, postsecondary education will be among the most important determinants of labor market success, and therefore one of the nation's most crucial means of reducing persistent economic inequalities. President George W. Bush, among others, considers education a primary force for economic and social mobility in the United States. Indeed, during the second 2004 presidential debate, he cited it as the single most important means of improving mobility and leveling social and economic differences.

Traditionally, the nation's higher education system, especially its public component, has had two primary goals: economic efficiency and social equity. As to the first, without collective intervention in support of higher education, individuals by themselves are unlikely to invest sufficiently in postsecondary schooling, because they fail to take into account the social benefits that accrue to their added spending. Hence, a strictly market-based approach to postsecondary schooling would provide the nation's labor force with insufficient advanced skills and training. Society thus subsidizes postsecondary schooling in a variety of ways—through preferential loans, public provision, and below-cost tuition.

In addition to promoting economic efficiency, collective measures to support higher education have a second goal—to contribute to an “even start” for the nation's youth. The case for public provision of higher education and for public financial support to reduce the private costs of higher education (indeed, the

case for public education in general) has long rested on the desire to reduce the connection between parents' social class and their children's economic position as adults.

However, despite past U.S. efforts to promote postsecondary schooling for youth from lower-income backgrounds, evidence is mounting that income-related gaps both in access to higher education and in college graduation rates are large and growing. About 85 percent of eighth-grade students in the United States aspire to a college degree.<sup>3</sup> But in 2001, only 44 percent of high school graduates from the bottom quintile of the income distribution were enrolled in college in the October after they graduated from high school, as against almost 80 percent of those in the upper quintile.<sup>4</sup> Thomas Kane reports that even among students with similar test scores and class ranks and from identical schools, students from higher-income families are significantly more likely than those from lower-income families to attend college, particularly four-year colleges.<sup>5</sup> Indeed, since the 1970s students from lower-income families have increasingly become clustered in public two-year postsecondary institutions, which often turn out to be the end of their formal education.<sup>6</sup>

These disparities in college access lead to widening gaps in the share of students remaining in college until graduation. Of eighth graders surveyed in the National Education Longitudinal Study (NELS) of 1988 conducted by the Department of Education, 51 percent from the highest socioeconomic quartile reported having a bachelor's degree twelve years later, as against only 7 percent of those from the lowest quartile.<sup>7</sup> Melanie Corrigan reports that 59 percent of low-income students who began postsecondary education in 1998 had a degree or were still in school

three years later, as against 75 percent of higher-income students.<sup>8</sup> Students from low-income families are less likely than students from high-income families to estimate accurately the cost of college, more likely to take remedial courses in college, and less likely to understand the college application process, in part because their parents did not attend college themselves and in part because their high schools, which send few students on to four-year baccalaureate degrees, lack useful and timely advice on college preparation.<sup>9</sup>

### Higher Education, Inequality, and Social Mobility

The traditional role of colleges and universities in promoting social mobility has attracted the attention of both policymakers and social science researchers. In his discussion of what he calls “education-based meritocracy,” John Goldthorpe explains that a merit-based higher education system can offset the role of social class in determining economic outcomes. In a merit-based system, he notes, postsecondary schooling is a filter that keeps parents’ economic position from simply passing straight through to their children, thus simultaneously promoting economic efficiency, social justice, and social mobility.<sup>10</sup>

Goldthorpe posits three requirements for moving toward a less class-based society. First, the link between individuals’ social origins and their schooling must increasingly reflect *only* their ability. Second, the link between their schooling and their eventual employment must be *strengthened* by qualifications acquired through education. And third, the link between schooling and employment must become *constant* for individuals of differing social origins.<sup>11</sup>

Goldthorpe notes that Michael Young, in his important 1958 book on *The Rise of Meritoc-*

*racy*, feared that in Britain the effect of higher education on social equality was being undermined by the interaction of public policies, the selectivity of colleges and universities, and evolving labor-hiring practices. He notes that Young was concerned about the way that “the purposes of the Education Act of 1944 were being interpreted by post-war governments. The Act established ‘secondary education for all,’ and was intended to give all

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*The high concentration in the nation’s colleges and universities of youth from the top echelons of parental income and social class is disturbing and appears to be increasing.*

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children the fullest possible opportunity to develop their abilities, whatever form or level they might take.”<sup>12</sup> In Young’s view, the 1944 law was being used increasingly as a means of social selection—in the name of “merit”—for different grades of employment with differing levels of reward in terms both of money and of status.

Young’s fear, in mid-twentieth-century Britain, was that the employment process was undermining the goal of social equality. Today, however, the selection processes within higher education itself also appear to be a problem. The high concentration in the nation’s colleges and universities of youth from the top echelons of parental income and social class is disturbing and appears to be increasing. It exists at all levels of postsec-

ondary schooling but is especially evident at the nation's best (most selective) colleges and universities.

Two forces, operating in different directions, appear to have caused these growing inequalities. First, increasingly affluent higher-income parents with one or two children invest time, money, and influence to ensure their children's academic success from pre-

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*Contrary to its stated goals and repeated claims, the U.S. higher education system fails to equalize opportunities among students from high- and low-income families.*

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school through graduate school. And second, children of less well-educated and less well-to-do parents begin the "college education game" later, with fewer choices and fewer resources. For example, in 2000 parents at the ninetieth percentile of the income distribution had available an average of \$50,000 to support each child, including his or her schooling, as against \$9,000 per child for families in the tenth percentile.<sup>13</sup>

Although resilience, luck, and persistence pay off for a minority of low-income children, the odds are increasingly stacked against their success.<sup>14</sup> Therefore, policies designed to address these inequalities should focus not simply on the point at which students move from secondary to postsecondary education, but on the long-term path from kindergarten through college graduation.

Contrary to its stated goals and repeated claims, the U.S. higher education system fails to equalize opportunities among students from high- and low-income families. Rather, the current process of admission to, enrollment in, and graduation from colleges and universities contributes to economic inequality as measured by income and wealth. The system thus seems to intensify and reinforce differences in economic status. Though college attendance rates are rising, college graduation rates for U.S. students are growing slowly, if at all, and changes in the composition of the college-eligible and college-graduating populations appear to perpetuate existing class differences. If so, the current system of higher education will contribute to growing income and wealth inequality, which in turn will exacerbate these inequalities across future generations.

Does this mean that higher education retards social mobility? Not necessarily. But it seems clear that higher education does not promote social equality as effectively as it often claims to do and as it is popularly perceived to do.<sup>15</sup> We therefore suggest some policies that would increase and equalize access to higher education and hence improve social mobility.

In this article, we explore the broad issues facing educators and policymakers seeking to eliminate income- and wealth-related disparities in college attendance and graduation. We first summarize some research findings and present some new measures of inequality in college access and enrollment. We then explore how elementary and secondary education contribute to inequality in postsecondary education, as well as how differences in the kind of information available to youth of different backgrounds affect how they apply to college, how they navigate the admission process, and once they are admitted, how

long they continue in college and whether they graduate. We also consider the implications for college success of the different varieties of higher education, including the community college system and remediation programs designed to ease inequalities among enrolled students. Each is important for assessing the overall effect of higher education on both economic inequality and mobility. Finally, we suggest policies that would enable higher education to enhance social mobility and advance the life chances of disadvantaged children.<sup>16</sup> We concentrate on the most recent trends in college-going, but refer to the work of others who present evidence on longer trends in earlier periods.<sup>17</sup>

### **On Higher Education and Social Mobility: What Do We Know?**

One of the stated objectives of the nation's colleges and universities is to be a meritocratic filter between the economic position of the families in which children grow up and those children's economic position as adults. Higher education is expected to promote the goal of social mobility and to make it possible for anyone with ability and motivation to succeed. To be effective in this role, colleges and universities must seek out ability, motivation, and preparedness wherever it lies and then provide high-quality educational services to their students. The labor market will do the rest, rewarding those who acquire the skills that the nation's postsecondary system has to offer.<sup>18</sup>

How well are college and university admission, training, and completion fostering this meritocratic goal? If true "merit" could be measured, answering that question would be easy. One could simply assess the extent to which the most meritorious youth were being sought out, admitted, and trained. Indeed, if merit—ability, motivation, and prepared-

ness—were equally distributed among youth regardless of family income or economic position, an effective higher education sector would offer an equal chance of admission and graduation to all—high-income and low-income youth alike. But ability, motivation, and preparedness are all linked to the economic position of the children's families. Children from well-to-do families tend, on average, to have more of all three traits; children from disadvantaged families, to have less. Genetics plays a role in the allocation of ability and motivation, as do the choices made by and the environment created by families of differing incomes. As for preparedness, the nation's primary and secondary school systems train youth from various economic backgrounds for postsecondary schooling. Other articles in this volume address these precollege patterns.<sup>19</sup>

The absence of a reliable merit marker makes it more difficult to assess how well higher education promotes social mobility. One would be surprised if rates of college admission, matriculation, and graduation were equal regardless of families' varying economic circumstances, and as we will show, they are not. The question, then, becomes whether the inequality in the provision of higher education services is consistent with a pattern of training being offered to those with the most merit. Even more relevant, perhaps, is whether the inequality in higher educational attainment is increasing or decreasing.

### **Levels and Trends in Economic Inequality in Higher Education**

Table 1 presents an overview of some of the findings of David Ellwood and Thomas Kane in their review of early research on the relationship between schooling and economic background over time. The type of schooling

**Table 1. Proportion of Students Who Enroll in Colleges and Universities within Twenty Months of Graduating from High School**

Percent

Cohort	Total	Vocational/technical school	Two-year college	Four-year college
High school class of 1980–82				
Bottom quartile	57	12	16	29
Top quartile	80	6	19	55
Total	68	10	19	39
High school class of 1992				
Bottom quartile	60	10	22	28
Top quartile	90	5	19	66
Total	75	7	23	45

Source: David Ellwood and Thomas J. Kane, “Who Is Getting a College Education: Family Background and the Growing Gaps in Enrollment,” in *Securing the Future: Investing in Children from Birth to College*, edited by Sheldon Danziger and Jane Waldfogel (New York: Russell Sage Foundation, 2000). Data are taken from the High School and Beyond study.

described in the table, college-going, says little about total years of completed schooling or college graduation. For students who graduated from high school during 1980–82, the overall rate of college-going is 80 percent for youth from the top income quartile of families, as against 57 percent for youth from the bottom quartile. Youth from the poorest families were concentrated in vocational and technical institutions, while those from the richest families tended to enroll in four-year colleges.<sup>20</sup>

Between 1980–82 and 1992, the overall college enrollment rate rose 7 percentage points. But the rate for the highest-income youth increased 10 points, while the rate for the lowest-income youth increased only 3 points. In terms of attendance at four-year colleges, the gap between the highest- and lowest-income youth widened far more during this period. While the share of most disadvantaged youth enrolled in four-year colleges fell slightly (from 29 to 28 percent), that for the most well-to-do youth rose substantially (from 55 to 66 percent). The gap between the two groups widened from 26 percentage points to 38 percentage points.<sup>21</sup>

### Inequality and the Quality of Colleges and Universities

The patterns revealed by Ellwood and Kane are consistent with tabulations of Anthony Carnevale and Stephen Rose, who analyzed detailed data from the High School and Beyond study and from the NELS of 1988.<sup>22</sup> They divided all four-year colleges and universities into four tiers by quality, based on the Barron index of college selectivity, putting community colleges into a separate category; and divided all families into four socioeconomic status categories, based on their income and parental education and occupation.<sup>23</sup> Their findings are summarized in table 2.

In the 146 top-tier colleges and universities (accounting for about 10 percent of all college students), 74 percent of the entering class is from the highest socioeconomic quartile and only 3 percent from the lowest quartile. In the 253 colleges in the second tier (accounting for about 18 percent of all college students), the shares are 46 and 7 percent, respectively. Only in community colleges is the composition of entering students by fam-

**Table 2. Socioeconomic Status of Entering Classes, by College Selectivity**

Percent

Colleges grouped by selectivity	Socioeconomic status quartile <sup>a</sup>	
	Bottom	Top
Tier 1	3	74
Tier 2	7	46
Tier 3	10	35
Tier 4	16	35
Community colleges	21	22

Source: Anthony P. Carnevale and Stephen J. Rose, "Socioeconomic Status, Race/Ethnicity, and Selective College Admissions," in *America's Untapped Resource: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), pp. 101–56. Data are from the National Education Longitudinal Study of 1988.

a. Compared to 25 percent of all youth in each quartile.

ily socioeconomic status similar to the composition of all youth of college age.<sup>24</sup>

### Patterns of Educational Attainment by Family Permanent Income

These family income–related gaps in higher education attainment rely on estimates of income that are somewhat difficult to interpret, and in some cases are suspect. First, among the national data collected, income values are sometimes for the households in which students reside, and hence do not necessarily pertain to the parents of these children.<sup>25</sup> Second, for some data sources, parental income is supplied by the students themselves in response to survey questions, and these responses are suspect.<sup>26</sup> Third, none of these studies allows for the "income needs" of the families of the youth being studied. It clearly matters whether a student from a family with \$50,000 a year of income is an only child or has several siblings who are also competing for family resources. Finally, and most important, the parental or family income data are one-year "snapshot" (or transitory) values and hence fail to reflect the long-term (or "perma-

nent") economic position of students' families.<sup>27</sup>

Robert Haveman and Kathryn Wilson proceeded in a somewhat different way to get a reliable picture of inequalities in higher education attainment for a specific cohort of youth. Using the Michigan Panel Survey of Income Dynamics (PSID), they selected a nationally representative sample of 1,210 children who were born between 1966 and 1970 and followed them from 1968, the first year of the PSID (or their year of birth, if later), until 1999. This cohort would be expected to graduate from high school in the late 1980s and from college in the early 1990s. The authors measured educational outcomes—high school graduation, college attendance, college graduation, and years of schooling—at age twenty-five. For each individual, they also calculated permanent income relative to "needs" and the wealth of the family in which he or she grew up. The ratio of income to needs is the average real value of the family's income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fourteen to eighteen.<sup>28</sup>

Table 3 summarizes the educational attainment of youth from the bottom and the top quartiles and deciles of family "permanent" income-to-needs ratios.<sup>29</sup> While only about 22 percent of youth from the bottom quartile of families attended college, 71 percent from families in the top quartile at least entered a college or university. The gap is nearly 50 percentage points. Among the youth from the top quartile, 42–44 percent graduated from college, as against only 6–9 percent of youth in the bottom quartile, a gap of more than 35 percentage points. Transitions from high school graduation to college attendance

**Table 3. Educational Attainment of 1966–70 Birth Cohort, by Decile and Quartile of Family Average Income-to-Needs Ratio<sup>a</sup>**

Percent

Educational attainment	Decile		Quartile	
	Bottom	Top	Bottom	Top
Share of cohort graduating from high school	56.8	97.7	64.1	96.1
Share of cohort attending college	19.5	78.2	21.6	71.2
Share of high school graduates attending college	34.3	80.0	33.8	74.1
Share of cohort graduating from college	6.3	49.1	5.6	42.1
Share of those attending college who graduate	32.3	62.8	25.9	59.1
Years of schooling	11.2	14.6	11.8	14.2

Source: Robert Haveman and Kathryn Wilson, “Economic Inequality in College Access, Matriculation, and Graduation,” conference on “Economic Inequality and Higher Education: Access, Persistence and Success,” Maxwell School of Syracuse University, September 23–24, 2005. Data are from the Michigan Panel Study of Income Dynamics (PSID).

a. The ratio of income to needs is the average real value of the family’s income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fourteen to eighteen.

and from college attendance to college graduation are also shown. Again, substantial gaps exist between youth from the highest and lowest quartiles in the probability of making these transitions. The gaps between the attainment levels of youth from the top and bottom deciles are even greater, suggesting a continuous relationship between economic status and educational attainment.

The pattern of extreme inequality between youth from the top and bottom quartiles of the family income-to-needs ratio is similar in terms of the allocation of educational services. Table 4 shows the distribution of all high school graduates, college attendees, and college graduates in this cohort of youth, by decile and quartile of family income-to-needs ratio. Among high school graduates, nearly 30 percent are from the top income quartile, while about 20 percent are from the bottom quartile. At least in terms of attainment—though not necessarily in terms of quality-adjusted attainment—high school educational services are distributed relatively evenly among children from various economic back-

grounds. The pattern for college graduates, however, is quite different. Among all college graduates in this cohort, more than 50 percent are from families with income-to-needs ratios in the top quarter of the nation, while only 7 percent are from the lowest quarter of families. Similarly, the 10 percent of families in the lowest income-to-needs decile yield less than 3 percent of college graduates. Put differently, half of all higher educational services necessary for attaining a college degree are allocated to youth from the richest quarter of the nation’s families, as against only 7 percent allocated to youth from the poorest 25 percent of families and only 3 percent to youth from the poorest 10 percent of families.

### How Large Is the Pool of Qualified Low-Income Students?

The question of whether colleges and universities have been making enough effort to admit and enroll qualified students is difficult to answer. The definition of “qualified” is directly related to the selection standards that schools themselves define and impose. Two studies have tried to answer this question for

**Table 4. Distribution of 1966–70 Birth Cohort at Selected Levels of Educational Attainment, by Decile and Quartile of Family Average Income-to-Needs Ratio<sup>a</sup>**

Percent

Educational attainment	Decile		Quartile			
	Bottom	Top	Bottom	Third	Second	Top
High school graduate	6.6	11.6	19.0	25.2	27.1	28.7
Attended college	4.2	17.1	11.8	20.6	28.3	39.2
College graduate	2.9	23.2	6.6	17.4	25.9	50.1

Source: See table 3.

a. The ratio of income to needs is the average real value of the family's income while the youths were aged two to fifteen, divided by the national poverty line (for a family of that size) and the average wealth (net worth) of the family in 1984, when the youths ranged in age from fifteen to eighteen.

the highest-quality and most selective U.S. colleges and universities, and both have concluded that the available pool of qualified youth is far greater than the group of students admitted and enrolled at these institutions.

The first of these studies, by Carnevale and Rose, uses a simulation approach for 146 top-tier colleges and universities (again, accounting for about 10 percent of all college students). They consider an “SAT equivalent” score above 1,000 as evidence of ability to succeed at these first-tier schools, and then compare the share of low-income students who are qualified with the share of these students who are enrolled. Among students with scores above the cutoff, 5 percent were from the bottom socioeconomic quarter (3 percent of comparable students were enrolled), as against 21 percent from the bottom half (10 percent of comparable students were enrolled). More than 800,000 students had an SAT equivalent score of more than 1,000—four-and-a-half times the total number of student slots at the first-tier schools.<sup>30</sup>

More recently, Gordon Winston and Catharine Hill have used a similar approach to determine whether the nation's most prestigious colleges and universities (twenty-eight

of the private colleges participating in the Consortium on Financing Higher Education) could increase their enrollment of low-income students without sacrificing academic standards. Using an SAT equivalent score of 1,420 as the cutoff for “high ability,” they show that 12.8 percent of all high-ability students are from the bottom two income quintiles, a total of about 4,300 students. Today these colleges matriculate only about 2,750 such students, leading the authors to conclude that the colleges could enroll more such students without decreasing selection standards.<sup>31</sup>

In focusing on the top-quality colleges and universities, these studies do not address the larger problem of lower-scoring but nevertheless qualified low-income students who attend less selective schools. Indeed, more than three-quarters of all college students attend colleges and universities that do not impose high selectivity standards.<sup>32</sup> Hence, even if the most selective colleges and universities admitted qualified low-income youth, there would still be a nontrivial attendance gap between the rich and the poor.

Indeed, part of the gap between low-income students' population share and their enroll-

ment in colleges and universities is due to low test scores and other indicators of ability that are indirectly related to family income. For example, although 36 percent of low-income students at high-income high schools were in the top half of the test score distribution, only 24 percent of low-income students at low-income high schools scored at this level.

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*Indeed, part of the gap between low-income students' population share and their enrollment in colleges and universities is due to low test scores and other indicators of ability that are indirectly related to family income.*

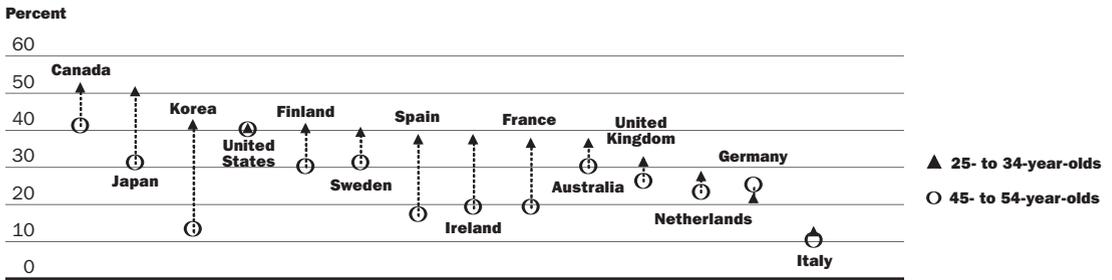
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Although this evidence regarding the effectiveness of higher education's meritocratic filter is not decisive, these gaps are large. More significant, they appear to be growing. Colleges and universities may aspire to weaken the link between family socioeconomic class and life prospects, but their efforts have been discouraging—particularly in the case of the four-year colleges and universities, the traditional heart of the higher education system, producing the highest-quality educational services. In sum, the allocation of educational services (especially services of the highest quality) is concentrated among youth from families with the highest economic status, and the concentration appears to be increasing. This trend has been reinforced by the erosion in state financial support for public higher education over past years, as spending on other priorities, such as medical care for

low-income families, criminal justice, and K–12 education has been substituted for support of public colleges and universities.<sup>33</sup>

### **Slow Growth in College Graduation Rates: Some International Evidence**

At a time when the links between U.S. students' economic origins and their attainment of higher education are strengthening, progress in increasing the number of U.S. college graduates has stalled.<sup>34</sup> Indeed, for any given cohort, there has been virtually no change over the past two decades in the share of youth who have been awarded a postsecondary degree. Figure 1 compares schooling for two cohorts observed in 2002—one aged twenty-five to thirty-four (born 1966–75), the other aged forty-five to fifty-four (born 1946–55)—in fourteen industrialized nations. With two exceptions—reunified Germany and the United States—the share of adults with a postsecondary degree has increased in every country. Although the older U.S. cohort ranked second in the share of adults with a postsecondary degree (about 40 percent), the younger cohort ranked fifth. Four countries had gained parity with the United States or forged ahead, with Canada and Japan outpacing the United States by 10 percentage points. Another five countries had closed the gap to less than 5 percentage points. Only Italy trailed behind by more than 15 percentage points. If U.S. colleges and universities had been able to increase the rate of college graduation over this period, they would likely have been able to serve greater shares of youth from lower-income families, thus weakening the link between family economic origins and postsecondary attainment. The increased concentration of youth from higher-income families in America's colleges and universities, together with the constant rate of college completion, seems consistent with a trend toward zero-

**Figure 1. Percentage of the Population That Has Attained Postsecondary Education, 2002**

Sources: Dirk Pilat, "Canada's Productivity Performance in Comparative Perspective," *International Productivity Monitor* (Ottawa: Center for the Study of Living Standards), no. 10 (2005): 24–40; OECD, *Education at a Glance* (Paris: 2004), table A3.3, p. 71.

sum competition among institutions for a relatively constant stock of the best qualified students—who also are concentrated in the nation's highest-income families.<sup>35</sup>

### The Effect of Postsecondary Schooling on Earnings

Higher education influences social mobility not only because family income affects schooling but also because schooling affects the income of adult children. Research on the link between schooling and earnings is extensive.

In a recent review of research, Orley Ashenfelter, Colm Harmon, and Hessel Oosterbeek compare the findings of several types of studies of the labor market returns to education. They find that across twenty-seven studies in nine countries, the market-based returns to schooling are large and robust, ranging from 6.6 to 9.3 percent. After adjusting for "publication bias" (the tilt inherent in the scholarly publication process leading to a higher probability of acceptance for studies with statistically significant results), they find estimated rates of return between 6.8 and 8.1 percent for the United States.<sup>36</sup>

Building on these overall findings, a few studies have estimated how returns to school-

ing differ by quality and type of institution. Thomas Kane and Cecilia Rouse find that the returns to one credit at a two-year or four-year college are roughly 4–6 percent for every thirty completed credits. They find, further, that the "sheepskin effect" of degree completion over and above the value of the credits completed is small but positive for men who complete a B.A. and for women who complete the associate's degree.<sup>37</sup> Researchers have also estimated returns to the quality of four-year college. One study finds positive effects of elite colleges on earnings.<sup>38</sup> But another finds that students who attend more elite colleges do not earn more than students who were accepted by comparable colleges, but attended less elite colleges.<sup>39</sup>

Similarly, a few studies have sought to identify the lifetime returns to education for youths from different socioeconomic backgrounds. In general, the earnings gains for students from high-income families exceed those for students from low-income families. For example, Jeff Grogger and Eric Eide indicate that, controlling for other characteristics, the discounted present value of income gains over the first nine years of work for white males with high grades in high school is 8 percent greater when family income is in

the \$70,000 annual income range than for students from families with annual income in the \$30,000 range.<sup>40</sup> Similar differences exist for students with other characteristics.

## Steps in the College Process

Clearly, high-income youth are overrepresented in U.S. colleges. Why they are overrepresented, however, is not well understood. In this section we summarize what is known about how family background affects each of the steps in the process of applying to, securing admission to, and graduating from the nation's colleges and universities.

### Preparing for College and Applying for Admission

Students must overcome several hurdles to succeed in postsecondary education, and the overall process is complex. First, students must be well-prepared in elementary and secondary school (see the article by Cecilia Elena Rouse and Lisa Barrow in this issue). High schools in poor and minority neighborhoods, however, tend to be of low quality and to lack the resources, both financial and human, to prepare students adequately for postsecondary schooling.<sup>41</sup> Rigorous courses in all fields, but especially mathematics, are rare in these high schools, as are opportunities for honors course work or advanced placement—making it hard for students to build a proper academic foundation for college work. One study finds that only half of low-income high school graduates in 1992 who applied for admission to a four-year institution were “minimally qualified” to enroll, as against more than 80 percent of students from families with incomes of \$75,000 or more.<sup>42</sup> Some observers claim that the nation's secondary schools give students poor signals about the preparation needed to succeed in higher education because advocates

and policymakers overemphasize “access” as opposed to “preparation.”<sup>43</sup>

Nor do poor-quality high schools support and teach the study and work habits necessary for postsecondary success. Although the reasons for poor student motivation are surely complex and lie in part with the families and neighborhoods in which children are raised, the discipline and standards set by the nation's poorest schools also contribute.

The poor quality of schools in low-income neighborhoods also affects how much students know about how to select colleges, apply for admission, and gain acceptance. A recent study highlights some of the difficulties these students encounter. Thomas Kane reports data from a Boston program showing that inner-city, primarily minority students, report plans to attend college similar to those of their suburban, primarily white, counterparts. But only a third of the inner-city students had taken the SAT exam by October of their senior year, as against 97 percent of the suburban students.<sup>44</sup> Further, the low-income and minority students and their parents were ill-informed about the cost of attending college and were often put off by the high “sticker prices” emphasized by the media.<sup>45</sup> They were also unfamiliar with the availability of needs-based financial aid.

Michael Timpane and Arthur Hauptman provide a comprehensive discussion of academic preparation and performance and offer suggestions for improving both. They recommend that colleges and universities help improve K–12 education (for example, through teacher preparation and partnerships with elementary and secondary schools). They also support moves to help students make the transition from high school to college (for example, through increasing high school gradu-

ation standards and providing support services and early interventions), strengthening remediation programs, and improving the performance of low-income students while in college.<sup>46</sup>

### Finding and Getting Financial Aid

According to the College Board, financial aid for undergraduates and graduate students totaled more than \$122 billion in 2003–04, an 11 percent increase from the previous year, over and above inflation. Federal guaranteed loans account for about half of that total. Other federal support made up another 20 percent, with Pell grants constituting about three-quarters of that. State and institutional support made up the remaining 30 percent. But though financial aid itself is rising, the share targeted on low-income students has been falling, as needs-based assistance has been increasingly replaced by merit-based aid.

According to most recent analyses, trends in family income, tuition, and financial aid policy have most adversely affected those students least able to afford postsecondary schooling. For example, college prices (in real terms, net of inflation) were nearly flat during the 1970s but increased rapidly during the 1980s and 1990s, when tuition rose two and even three times as fast as the price of other consumer goods.<sup>47</sup> This trend, together with the growing inequality of family income, has raised the cost of attending college far more for students in low-income families than for those in well-to-do families. In the early 1970s, paying for a child to attend a public four-year college absorbed 42 percent of the income of a low-income family; by the 2000s, it took nearly 60 percent; for students from high-income families, the increase in income share was from 5 percent to 6 percent.<sup>48</sup> Moreover, students from lower-income families are more sensitive to

tuition increases than students from higher-income families.<sup>49</sup>

Although these cost increases have been partially offset by increased student financial aid, the evidence suggests that major disparities continue to exist. In 2001 the Advisory Committee on Student Financial Assistance reported that “unmet need” is substantially higher for low-income students than for others, whether they attend public or private, four-year or two-year, colleges.<sup>50</sup> Several studies have tried to track the recent changes in the effective price of college attendance, taking account of changes in both financial aid and tuition. Amy Schwartz has summarized her own estimates as follows:

Evidence shows that sticker prices are rising, but increases in financial aid have been significantly offsetting. For two-year colleges, most of which are public institutions, the trend in net prices has been downward and current net prices are, on average, *negative*. Among four-year colleges, the net price of public colleges declined in the last decade with some modest increases in the last few years offsetting a larger decrease in the 1990s. The trend for four-year private colleges, however, has been unambiguously positive—net prices are significantly higher than a decade ago.<sup>51</sup>

Moreover, financial aid has increasingly come in the form of loans, rather than grants.<sup>52</sup> During the early 1980s, for example, grants made up 55 percent of student aid; by 2001, that figure was down to 41 percent. By 2001, loans to students and parents by the federal government totaled nearly \$40 billion, more than five times the resources of the Pell grant program that was meant to be the primary source of assistance to low-income students. Although the maximum Pell grant covered about 60 percent of the

cost of attending a four-year public institution in the early 1980s, it covered only about 40 percent by 2001.<sup>53</sup>

Michael McPherson and Morton Schapiro have concluded that colleges and universities are increasingly abandoning ability-to-pay principles and using student financial aid both to maximize net tuition revenue and to

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*Merit scholarships and other forms of non-needs-based assistance have grown over time, resulting in more aid to affluent students.*

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meet their goals for student quality. Merit scholarships and other forms of non-needs-based assistance have grown over time, resulting in more aid to affluent students.<sup>54</sup>

In more recent work, McPherson and Schapiro track changes in merit and needs-based financial aid and find that at all institutions, low-income students receive more grant aid than high-income students, across the range of SAT scores. But at private colleges and universities, the gap in aid between low- and high-income students increased as aid for low-income students fell, relative to that afforded high-income students. Over the 1990s, among students with the highest SAT scores, low-income students received 4.9 times as much aid during 1992–93, but only 2.8 times as much during 1999–2000. The authors suggest that this movement of grant dollars toward higher-income families reflects not a greater “demand” for students with high SAT scores, but rather an excess supply of places at selective private colleges,

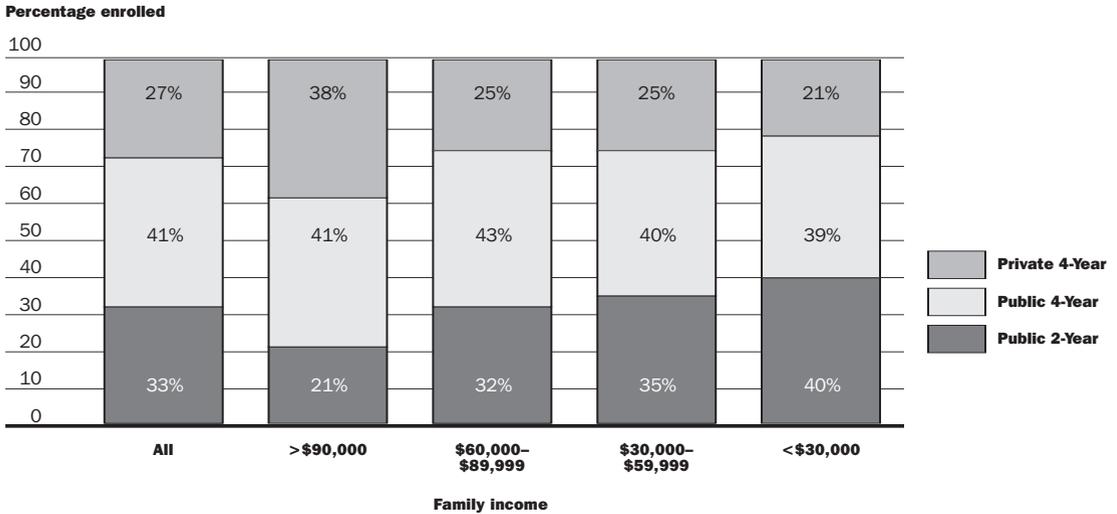
leading to a bidding down of the price through greater tuition discounts.<sup>55</sup>

At public colleges and universities, on the other hand, student aid awards rose more rapidly with need, and the “net price” facing low-income students declined during the 1990s. But state budget difficulties since 2000 suggest this trend may be ending. Moreover, more complicated rules about how much interest lenders can charge on student loans have led to new legislation reducing subsidies to lenders, negatively affecting the cost and targeting of federally subsidized student loan programs.<sup>56</sup>

One important issue is the extent to which the increase in merit-based assistance has increased the overall level of college attendance and completion. Susan Dynarski concludes that programs providing a substantial increase in merit-based student aid (thought of as tuition reduction) have increased both college attendance and students’ persistence in working toward a degree, especially among women, and in particular, nonwhite women.<sup>57</sup> Her evidence, however, does not effectively account for the possibility that colleges and universities may have offset external increases in student aid by increasing tuition.<sup>58</sup>

### Community Colleges

Community colleges and associate’s degree programs play an important but as yet poorly understood role in postsecondary education.<sup>59</sup> Indeed, Dan Goldhaber and Gretchen Kiefer show that although about 40 percent of all postsecondary students attend four-year public universities, lower-income children are twice as likely to attend public two-year (community college or associate’s degree) programs than are higher-income children, almost exactly in reverse proportion to the share of higher-income

**Figure 2. Institutional Choice, by Income Level, 1999–2000<sup>a</sup>**

Sources: Reproduced from College Board, *Education Pays 2004* (Washington: College Entrance Examination Board, 2004); Dan Goldhaber and Gretchen Kiefer, “Higher Education and Inequality: The Increasingly Important Role Community Colleges Play in Higher Education,” unpublished manuscript, University of Washington, presented to the Maxwell School Conference on Economic Inequality and Higher Education: Access, Persistence and Success, September 23–24, 2005.

a. Values may not sum to 100 percent because of rounding. Percentages include full-time dependent students in the first year of undergraduate study.

children who attend private, four-year colleges (see figure 2).<sup>60</sup>

Community colleges serve several important functions in postsecondary education. First, they provide the key access point to higher education for nonwhite and Latino students.<sup>61</sup> For instance, almost 60 percent of all Latinos enrolled in higher education enroll first in community colleges.<sup>62</sup> These students are highly tuition-price sensitive and often choose part-time instead of full-time enrollment.<sup>63</sup> Still, a full 30 percent of all community college enrollees want to go on to complete a four-year degree. Indeed, community colleges provide remedial education for students who are not yet qualified for four-year colleges and universities, though researchers know surprisingly little about this community college function. An estimated 55 percent of all community college students take courses in remedial mathematics or English.<sup>64</sup>

Community colleges also offer technical and occupational training and certificates of competency in some fields, both of which increase the earnings of recipients beyond those of high school graduates.<sup>65</sup> By themselves, however, neither two-year degrees nor certificates lead to additional higher education and baccalaureate degrees. Moreover, students who attend community colleges in search of occupational degrees and certificates are more likely than students at four-year institutions to come from disadvantaged families, to delay enrollment and enroll part time, to interrupt their education, and to cite job skills as the reason for enrolling.<sup>66</sup> The technical training role is not well understood and is complicated by many “nontraditional student” labor market factors. For instance, one recent study estimates that 28 percent of community college enrollees already hold a bachelor’s degree and are taking courses to gain a technical certification of competency or for consumption purposes alone.<sup>67</sup>

Still, the primary social mobility role of community colleges lies in their ability to raise college completion rates among low-income children. Indeed, many community colleges are linked to four-year institutions, providing a bridge to a four-year baccalaureate degree, though there is little systematic evidence of such arrangements. Jane Wellman suggests that transfer policies from two- to four-year state colleges, the primary road from commu-

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*The primary social mobility role of community colleges lies in their ability to raise college completion rates among low-income children.*

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nity colleges to public institutions granting higher degrees, are not always well articulated by states and that the effectiveness of state policies varies widely.<sup>68</sup> Further development of the National Student Clearinghouse (NSC) database would greatly enhance our ability to gather a more complete picture of this process.<sup>69</sup> According to NSC data, perhaps 30 to 35 percent of community college students transfer to four-year colleges.<sup>70</sup> But Goldhaber and Kiefer suggest that increasing these transfer rates will make capacity in receiving institutions a major policy issue.<sup>71</sup>

In summary, because community colleges are often the initial access point to higher education for disadvantaged students, understanding their role in providing bridges to schools of higher education is essential.

### **Remediation and Persistence**

Being admitted to college does not assure graduation. Indeed Vincent Tinto has noted

that “access without support does not ensure equality of opportunity.”<sup>72</sup> Low-income students are more likely to be not only academically unprepared, but also psychologically and culturally unprepared, for college. As table 3 shows, although 22 percent of youth from the lowest income quartile attend college, only 6 percent graduate. In contrast, half of all students from the highest income quartile who attend college manage to graduate within six years of matriculation. Poorly prepared students tend to be from lower-income backgrounds and are more likely to require remedial courses, additional counseling, and other services, and are therefore less likely to get a degree.<sup>73</sup> For example, in the California State University system, the remediation rate among freshmen is 60 percent, and only 39 percent of remedial students graduate. The problem is similar at community colleges, where 72 percent of students begin expecting to earn a degree and only 23 percent finish.<sup>74</sup>

Nevertheless, remediation efforts appear to be effective. Eric Bettinger and Bridget Long use data from Ohio to assess the effects of remedial programs on students’ ultimate success in college. They show that remediation improves educational performance—students who enroll in both math and reading remediation courses are less likely to drop out of school, more likely to complete a bachelor’s degree, and less likely to transfer to a lower-level college than similar students not enrolled in these courses. Students in each type of remediation are almost 10 percent less likely to drop out than similar students not in remediation.<sup>75</sup>

### **Summary and Policy Options**

Although overall educational attainment in the United States has risen slightly, the gains are concentrated among high-income chil-

dren.<sup>76</sup> While the effects of the college selection process have contributed to the substantial and growing concentration of children from higher-income families among the student body, the erosion of public spending for higher education has also played a role. As a result, these institutions have had to rely on some combination of increases in private giving, increased use of own-source funds such as endowments, reductions in costs and services, and increases in tuition and associated fees. This last development works together with the admissions and selection process to reduce access—especially for the offspring of less affluent families—to college and university (and especially community college) education. Finally, public educational assistance has tilted away from youth from low-income families toward the most meritorious and highly qualified youth, and therefore toward those from middle- and higher-income families. These developments come at a time when success in the labor market and in other aspects of social and economic life increasingly requires postsecondary training.

In response to these developments, colleges and universities, together with state governments and secondary schools, must develop financing structures that will both maintain quality and increase access for students from lower-income families. The policies we suggest are premised on the belief that students from high-income families will fare well regardless of ability, so that more of the resources available to secure college admission and matriculation should go to students from lower-income families.

The United States has a uniquely mixed system of public and private higher education. In most other rich nations, where higher education is more universalistic and almost to-

tally public, the cost of higher education is more fully subsidized, but homogeneity may also breed mediocrity. Still, the experiences of these countries can be instructive, as can the U.S. experience. Our policy recommendations are deliberately bold and are designed to increase educational opportunities for low- and middle-income students and therefore to increase intergenerational social and economic mobility. We take as given a pool of high school graduates who want more education, even if they are not fully and equally well prepared for it.

### **Strengthen Student Preparation**

Our first recommendation is to strengthen links between K–12 and postsecondary education and to place a greater emphasis on college preparatory coursework in the former. Students should begin school on a more equal footing, and universal high-quality preschool for all children may be a first step toward that goal. Middle and secondary schools should better prepare their students for higher education in its many forms.

### **Reducing Scope through Partnering**

Colleges and universities should get out of the business of providing services and functions for which they do not have a comparative advantage.<sup>77</sup> These services include remedial education (which at best should be left to community colleges or contract providers), but also dormitories, food services, and back-office operations. Colleges should instead focus on the core competencies in which they specialize. This paring back would be coupled with increased partnering with other service providers—private or public—who specialize in these services. Tuition charges would then be able to reflect the real cost of providing the core educational services, and students and their families could arrange for these related services in separate markets. In addition to

reducing the costs of colleges, such a program would probably increase the range of choice available to the potential consumers of these auxiliary services.

### **Pricing and Performance in Public Higher Education**

The vast majority of low-income students will be educated by public universities. Although tuition at public institutions has been rising,

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*One somewhat dramatic approach would be for institutions to simultaneously price tuition close to real costs and use the bulk of additional revenue to provide direct student aid targeted at students from low-income families.*

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it still falls well short of reflecting the real resource cost of the educational services provided. As a result, students who pay the full tuition—largely students from more well-off families—are receiving an implicit subsidy. One somewhat dramatic approach would be for institutions to simultaneously price tuition close to real costs and use the bulk of additional revenue to provide direct student aid targeted at students from low-income families. In addition to addressing the current inequity in the allocation of educational services, such an approach would tend to ration the limited supply of educational services (student slots) to those who value these services the most. Such a solution would also require a heavy advertising plan to make sure

that lower-income families understood that the net price of college was far below the sticker price, which is often the only information they have to react to.<sup>78</sup>

Pay for performance is another innovation for public universities to consider. Today, state government financial support to public institutions typically comes in the form of a lump-sum appropriation. As an alternative arrangement, the level of state government support could be tied to the performance of institutions, such as retention rates, graduation rates, the ability to limit cost and tuition increases, or increases in their share of students from below-median-income families. Such an arrangement would have desirable incentive effects and would redistribute resources from low- to high-performing schools. While a number of states have started to set performance benchmarks for state universities, so far they have been reluctant to tie state appropriations to performance. But why not subject postsecondary education to the same pay-for-performance pressures as elementary and secondary education?

### **Limiting Public Subsidies to Wealthy Private Schools**

At present, a substantial amount of federal subsidies (guaranteed student loans, Pell grants, tax subsidies) is made available to students who attend very wealthy institutions. These subsidies could be capped for wealthy universities that are able to increase their available student assistance. The savings of this policy could be redirected to students attending less well-endowed schools, both public and private.

### **Substituting Public Direct Student Assistance for Institutional Support**

As four-year colleges and universities have become increasingly selective in student re-

cruitment, students with the highest qualifications—most often those from the highest-income families—have been the targets of recruitment efforts and the recipients of increased merit-based assistance. This trend reflects a variety of forces, including the desire to increase institutional rankings in prominent publications, such as *U.S. News and World Report*; the tastes of faculty and other institutional stakeholders; and the pursuit of financial gains associated with the rapid increases in federal merit-based assistance that have been targeted on higher-income families. These forces are at play in both public and private higher education.

In response to this trend, state governments (as well as the federal government) could redirect to students the financial support they now provide to colleges and universities, say, in the form of higher education vouchers. The direct student assistance could be targeted toward students from lower-income families. Such an arrangement would not only enhance equity but also require schools to compete for students and redirect their attention toward the tastes and demands of their student constituents and away from those of other institutional stakeholders, such as faculties.

### **Lessons from Abroad: Redirecting Public Support for Higher Education**

Several countries are experimenting with a relatively new form of publicly supported student aid, known as income-related loans. In this system, former students repay debt contingent on their future incomes, meaning that their ultimate capacity to pay is given weight, and then only up to a limited point. In other words, loans are repaid by taxing post-school earnings to recover only the costs incurred, plus a small interest rate. Australia and New Zealand, in particular, are in the forefront of these policies. The especially successful Australian program is being adopted in Asian nations as well.<sup>79</sup>

### **Conclusion**

The U.S. system of higher education reinforces generational patterns of income inequality and is far less oriented toward social mobility than it should be. If higher education is to improve the chances for low- and middle-income children to succeed, the current system must be dramatically redirected, and the sooner the better. Big problems, such as those outlined above, require innovative thinking and bold reform.

## Notes

1. National Center for Education Statistics, *Digest of Education Statistics* (U.S. Department of Education, 2002), table 382.
2. M. Lindsay Morris, “Low-Income Women and the Higher Education Act Reauthorization,” *On Campus with Women* (Association of American Colleges and Universities) 3, no. 3 (Spring–Summer 2004), [www.aacu.org/ocww/volume33\\_3/national.cfm](http://www.aacu.org/ocww/volume33_3/national.cfm) (accessed on April 25, 2006).
3. Michael Kirst, “Overcoming Educational Inequality: The Role of Elementary and Secondary Education Linkages with Broad Access to Postsecondary Education,” paper presented to the conference on Economic Inequality and Higher Education: Access, Persistence and Success, Maxwell School of Syracuse University, September 23–24, 2005 (hereafter, Maxwell School conference on Economic Inequality and Higher Education).
4. National Center for Education Statistics, *The Condition of Education*, NCES 2003-067 (U.S. Department of Education, 2003), table 18-1.
5. Thomas J. Kane, “College Going and Inequality,” in *Social Inequality*, edited by Kathryn Neckerman (New York: Russell Sage Foundation, 2004); Pell Institute, *Indicators of Opportunity in Higher Education* (Washington: Pell Institute, 2004).
6. Thomas G. Mortenson, “Students from Low-Income Families and Higher Educational Opportunity,” *Postsecondary Education Opportunity* 78 (1998): 1–2.
7. National Center for Education Statistics, *National Education Longitudinal Study, 1988* (U.S. Department of Education, 2002); National Center for Education Statistics, *The Condition of Education 2000* (U.S. Department of Education, 2002), table 382.
8. Melanie E. Corrigan, “Beyond Access: Persistence Challenges and the Diversity of Low-Income Students,” *New Directions for Higher Education* 121 (2003): 25–34.
9. National Center for Education Statistics, *The Condition of Education* (U.S. Department of Education, 2001); John Wirt and others, *The Condition of Education 2004*, NCES 2004-077 (U.S. Department of Education, National Center for Education Statistics, 2004), table 19-2, p. 143.
10. John Goldthorpe, “Education-Based Meritocracy: The Barriers to Its Realization,” paper presented to the Center for Policy Research, Maxwell School of Syracuse University (April 2002), [www.cpr.maxwell.syr.edu/seminar/spring05/goldthorpe.pdf](http://www.cpr.maxwell.syr.edu/seminar/spring05/goldthorpe.pdf).
11. The effect of higher education on social mobility depends on both the effect of family income on schooling and the effect of schooling on offspring income. In our discussion, we emphasize the first of these components. However, we also provide some evidence on the latter linkage—that between schooling attainment and earnings.
12. Goldthorpe, “Education-Based Meritocracy” (see note 10).
13. Lars Osberg, Timothy M. Smeeding, and Jonathan Schwabish, “Income Distribution and Public Social Expenditure: Theories, Effects, and Evidence,” in *Social Inequality*, edited by Kathryn Neckerman (New York: Russell Sage Foundation, 2004), pp. 821–59. See also Susan Mayer, “How Did the Increase in Eco-

conomic Inequality between 1970 and 1990 Affect American Children's Educational Attainment?" unpublished manuscript, University of Chicago and Russell Sage Foundation (2005), on the effects of economic segregation on educational attainment.

14. Susan Mayer, "How Economic Segregation Affects Children's Educational Attainment," unpublished manuscript, Russell Sage Foundation (2005).
15. While there is no empirical estimate of the effect of the higher education system on social mobility, English social researchers suggest that, relative to parental socioeconomic status, the education sector explains 20 percent of the variance in the status of offspring in that country.
16. While our policy discussion recognizes the possibility that efforts to intervene in the development of human capital before the secondary and postsecondary levels may be more effective in attaining increased social mobility, we conclude that policies targeted on the higher education system are necessary to enable "college-qualified" youth to access and complete postsecondary schooling.
17. Robert D. Mare, "Change and Stability in Educational Stratification," *American Sociological Review* 46 (1981): 72–87; Robert Hauser, "Trends in College Entry among Whites, Blacks, and Hispanics," in *Study of Supply and Demand in Higher Education*, edited by Charles Clotfelter and Michael Rothschild (University of Chicago Press, 1993), pp. 61–104.
18. For an economic treatment of this issue, see Igal Hendel, Joel Shapiro, and Paul Willen, "Educational Opportunity and Income Inequality," *Journal of Public Economics* 89 (2005): 841–70.
19. Some would argue that in the face of the advantages enjoyed by youth from higher-income families, the higher education sector should target its services on those youth who lack these genetic and family-based advantages. We do not address this issue here, but note that the argument cannot easily be ignored if a goal of the higher education system is to promote social mobility.
20. David Ellwood and Thomas J. Kane, "Who Is Getting a College Education: Family Background and the Growing Gaps in Enrollment," in *Securing the Future: Investing in Children from Birth to College*, edited by Sheldon Danziger and Jane Waldfogel (New York: Russell Sage Foundation, 2000). Ellwood and Kane also report such gaps for students with similar mathematics test scores. For example, while 59 percent of high-income youth in the middle two quartiles of test scores attend a four-year college, only 33 percent of youth from the lowest income quartile and with test scores in this range attend these institutions. See also Paul Barton, "Toward Inequality: Disturbing Trends in Higher Education" (Princeton, N.J.: Educational Testing Service, 1997).
21. Over the period covered by these two cohorts, the earnings return to college-going also increased substantially. It appears that youth from high-income families responded strongly to these increased returns from higher schooling and (of more concern) will reap the gains of these returns in their future careers.
22. The High School and Beyond survey was sponsored by the National Center for Education Statistics to study the educational, vocational, and personal development of young people, beginning with their elementary or high school years and following them over time as they begin to take on adult roles and responsibilities. The survey included two cohorts: the 1980 senior and sophomore classes. Both cohorts were surveyed every two years through 1986, and the 1980 sophomore class was also surveyed in 1992.
23. The Barron indicator of college selectivity is from Barron's *Profiles of American Colleges*.

24. Susan Dynarski finds that even after controlling for ability, as measured by test scores, the college participation gap between youth in families in the top and bottom quartiles is 22 percentage points; without controlling for ability, the gap was 30 percentage points. See Susan Dynarski, "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion," Working Paper 7422 (Cambridge, Mass.: National Bureau of Economic Research, 1999).
25. The estimates in table 1 reflect the efforts of Ellwood and Kane, "Who Is Getting a College Education?" (see note 20) to measure parental family income in a consistent way across data sources (see p. 320).
26. The family income levels reported on student aid application forms (that is, supplied by parents) are generally substantially higher than the income levels reported by the students themselves in response to survey questions.
27. This distinction is also very important if one wishes to infer more than correlation between family income and higher education attainment. A number of recent studies have found that permanent household income is a significant determinant of both college attendance decisions by youth and the level of family investments in children, while transitory income is not. See Michael P. Keane and Kenneth I. Wolpin, "The Effect of Parental Transfers and Borrowing Constraints on Educational Attainment," *International Economic Review* 42, no. 4 (2001): 1051–103; Steven Cameron and James Heckman, "Life Cycle Schooling and Dynamic Selection Bias: Models and Evidence for Five Cohorts of American Males," *Journal of Political Economy* 106 (1998): 262–332; David Blau, "The Effect of Income on Child Development," *Review of Economics and Statistics* 81, no. 2 (1999): 261–76; Pedro Carneiro and James Heckman, "The Evidence on Credit Constraints in Post-Secondary Schooling," *Economic Journal* 112, no. 482 (2002): 705–34.
28. Robert Haveman and Kathryn Wilson, "Economic Inequality in College Access, Matriculation, and Graduation," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
29. The estimates are similar when wealth is used as the indicator of economic position.
30. Anthony P. Carnevale and Stephen J. Rose, "Socioeconomic Status, Race/Ethnicity, and Selective College Admissions," in *America's Untapped Resource: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), pp. 101–56.
31. Gordon Winston and Catharine Hill, "Access to the Most Selective Private Colleges by High-Ability, Low-Income Students: Are They Out There?" paper prepared for the Macalester-Spencer Forum, 2005.
32. Kirst, "Overcoming Educational Inequality" (see note 3).
33. See Thomas Kane and Peter Orszag, "Higher Education Spending: The Role of Medicaid and the Business Cycle," Policy Brief 124 (Brookings, September 2003).
34. Note that the focus here is on the completion of postsecondary schooling, and the data in figure 1 refer to degree attainment, not college attendance, per se. There have been increases in the extent of college-going in the United States over past decades. Susan Dynarski reports that "in 1968, 36 percent of 23-year-olds had gone to college. By 2000, that figure had grown to 55 percent. Over the same period, the share of young people with a college *degree* has risen relatively slowly." The reason for the disparity is the growth in college dropouts—students who start but do not complete college. Dynarski states that "in the 2000 Census, just 57 percent of those age 22 to 34 with any college experience had completed an associate's or bachelor's degree." See Susan Dynarski, "Building the Stock of College-Educated Labor," Working Paper 11604 (Cambridge, Mass.: National Bureau of Economic Research, 2005), [www.nber.org/papers/w11604](http://www.nber.org/papers/w11604).

35. In the future, it may be possible to study the linkage between family economic position and educational attainment using new data sources, for example, the Trends in International Mathematics and Science Study (TIMSS; <http://nces.ed.gov/timss/>) and the OECD's Program for International Student Assessment (PISA; <http://nces.ed.gov/surveys/pisa/>), in a cross-national context. These data sources have information on the test scores that are a precursor to college-going, thus enabling study of the linkage between family position and test scores. Ludger Woessmann makes an initial foray into these data and finds that although family background has a strong effect on student test scores, there is little variation across countries. However, in France and Flemish Belgium the effect of family background on test scores is smaller than average and in Germany and England it is larger, representing respectively greater and lesser degrees of inequality of educational opportunity. See Ludger Woessmann, "How Equal Are Educational Opportunities? Family Background and Student Achievement in Europe and the United States," Discussion Paper 1284 (Bonn, Germany: IZA, 2004).
36. Orley Ashenfelter, Colm Harmon, and Hessel Oosterbeek, "A Review of Estimates of the Schooling/Earnings Relationship, with Tests for Publication Bias," *Labour Economics* 6 (1999). Ashenfelter, Harmon, and Oosterbeek distinguished the studies by model, sample, extent of control for relevant variables, and the nature of the labor market (such as country). For example, across all of the studies the estimated rate of return to schooling averages 7.9 percent (S.D. = .036). When direct controls for schooling are employed, the average return drops to 6.6 percent (S.D. = .026); when data using twins are employed, the average return is 9.2 percent (S.D. = .037); when an instrumental variable approach is employed, the average return is 9.3 percent (S.D. = .041).
37. Thomas J. Kane and Cecilia Elena Rouse, "Labor-Market Returns to Two- and Four-Year College," *American Economic Review* 85, no. 3 (1995): 600–14.
38. Dominic Brewer, Eric R. Eide, and Ronald G. Ehrenberg, "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings," *Journal of Human Resources* 34, no. 1 (1999): 104–23. The study controls for selection on unobservables.
39. Stacy Berg Dale and Alan B. Krueger, "Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables," *Quarterly Journal of Economics* 117, no. 4 (2002), pp. 1491–527.
40. Jeff Grogger and Eric Eide, "Changes in College Skills and the Rise in the College Wage Premium," *Journal of Human Resources* 30, no. 2 (1995): 280–310.
41. Mayer, "How Economic Segregation" (see note 14); Kirst, "Overcoming Educational Inequality" (see note 3).
42. National Center for Education Statistics, *Digest of Education Statistics* (U.S. Department of Education, 2002).
43. Kirst, "Overcoming Educational Inequality" (see note 3); P. Michael Timpane and Arthur M. Hauptman, "Improving the Academic Preparation and Performance of Low-Income Students in American Higher Education," in *America's Untapped Resources: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004); Vincent Tinto, "Economic Inequality and Higher Education: Access, Persistence, and Success," comments delivered at the Maxwell School conference on Economic Inequality and Higher Education.
44. Kane, "College Going and Inequality" (see note 5), contains an excellent discussion of these issues.

45. Thomas Kane and Cecilia Rouse, "The Community College: Educating Students at the Margin between College and Work," *Journal of Economic Perspectives* 13, no. 1 (1999): 63–84; Amanda Pallais and Sarah E. Turner, "Access to Elites: The Growth of Programs to Increase Opportunities for Low Income Students at Selective Universities," paper presented to the Maxwell School conference on Economic Inequality and Higher Education; Michael McPherson, "Comments," presented to the Maxwell School conference on Economic Inequality and Higher Education.
46. Timpane and Hauptman, "Improving the Academic Preparation" (see note 43).
47. Much of the following discussion rests on Lawrence E. Gladieux, "Low-Income Students and the Affordability of Higher Education," in *America's Untapped Resources: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: Century Foundation Press, 2004), which includes a number of important recommendations for reform of federal, state, and institutional student financial aid. Many of these focus on increasing the targeting of assistance on students from low-income families.
48. College Board, *Trends in College Pricing, 2001* (New York, 2001).
49. For analysis of the causal impact of college costs on attendance, see Thomas J. Kane, "College Entry by Blacks since 1970: The Role of College Costs, Family Background, and the Returns to Education," *Journal of Political Economy* 102, no. 5 (1994): 878–911; Susan Dynarski, "Hope for Whom? Financial Aid for the Middle Class and Its Impact on College Attendance," *National Tax Journal* 53, no. 3 (2000): 629–61; Susan Dynarski, "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion," *American Economic Review* 93, no. 1 (2003): 279–88; Susan Dynarski, "The New Merit Aid," in *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, edited by Caroline Hoxby (University of Chicago Press, 2004). For a review of this literature, see Susan Dynarski, "The Behavioral and Distributional Implications of Aid for College," *American Economic Review* 92, no. 2 (2002): 279–85.
50. Advisory Committee on Student Financial Assistance, *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity* (Washington, 2001).
51. Amy Ellen Schwartz, "The Cost of College and Implications for Income Inequality," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
52. Leonard E. Burman and others, "The Distributional Consequences of Federal Assistance for Higher Education: The Intersection of Tax and Spending Programs," Discussion Paper 26 (Washington: Urban Institute Tax Policy Center, 2005), summarize the last decade of federal policy developments in this area as follows: "Since 1997, federal higher education subsidies have increasingly been delivered through the tax code rather than through traditional direct spending programs, such as grants, loans, and work study . . . and have been directed toward students from middle- and upper-middle-income families." Using a micro-data simulation model developed for estimating the distributional effects of higher education policies, they find that while two-fifths of Pell program expenditures flow to students in tax units with adjusted gross income (AGI) of less than \$10,000, the tax provisions provide little benefit to households at the lower end of the income distribution and concentrate the bulk of their benefits within the broad middle- and upper-middle class, with roughly \$50,000 to \$100,000 in cash income. They find that tax units in this income range receive almost 42 percent of the benefit from the various tax provisions, and that about one-seventh of the total tax benefit flows to tax units with cash incomes of \$100,000 or more.
53. Century Foundation, "Left Behind: Unequal Opportunity in Higher Education" (Washington, 2004).

54. Michael McPherson and Morton Owen Schapiro, *The Student Aid Game: Meeting Need and Rewarding Talent in American Higher Education* (Princeton University Press, 1998).
55. Michael McPherson and Morton Owen Schapiro, "Watch What We Do (and Not What We Say): How Student Aid Awards Vary with Financial Need and Academic Merit," draft paper for presentation at the conference on Opening Opportunity or Preserving Privilege, Chicago, 2005.
56. Congressional Budget Office, "H.R. 609, College Access and Opportunities Act of 2005," presented to the House Committee on Education and the Workplace (July 25, 2005).
57. Dynarski, "Building the Stock" (see note 34).
58. This behavioral response is often referred to as the "Bennett hypothesis," after former secretary of education William Bennett, who argued that "increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions." See William J. Bennett, "Our Greedy Colleges," *New York Times*, February 18, 1987, p. A31. For rather different conclusions on this response, see Bridget Long, "The Institutional Impact of the Georgia HOPE," *Journal of Human Resources* 39 (2004): 1045–66; and Benjamin Scafidi and others, "Merit-Based Financial Aid and College Tuition: The Case of Georgia's Hope Scholarships," unpublished manuscript, Georgia State University (2003).
59. Kane and Rouse, "The Community College" (see note 45).
60. Dan Goldhaber and Gretchen Kiefer, "Higher Education and Inequality: The Increasingly Important Role Community Colleges Play in Higher Education," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
61. Eric P. Bettinger and Bridget Terry Long, "The Role of Institutional Responses to Reduce Inequalities in College Outcomes: Remediation in Higher Education," paper presented to the Maxwell School conference on Economic Inequality and Higher Education.
62. Goldhaber and Kiefer, "Higher Education and Inequality" (see note 60).
63. Ibid.; Kane and Rouse, "The Community College" (see note 45); Thomas Kane, *The Price of Admission: Rethinking How Americans Pay for College* (Brookings, 1999).
64. Bettinger and Long, "The Role of Institutional Responses" (see note 61).
65. Thomas Bailey, Gregory Kienzl, and Dave E. Marcotte, "The Return to a Sub-Baccalaureate Education: The Effects of Schooling, Credentials and Program Study on Economic Outcomes" (Institute on Education and the Economy and the Community College Research Center, Teachers College, Columbia University, 2004).
66. Thomas Bailey and others, "Educational Outcomes of Occupational Postsecondary Students" (Institute on Education and the Economy and the Community College Research Center, Teachers College, Columbia University, 2004).
67. Debbie Sydow, comments presented to the Maxwell School conference on Economic Inequality and Higher Education.
68. Jane Wellman, "State Policy and Community College—Baccalaureate Transfer" (National Center for Public Policy and Higher Education, Stanford University, August 2002); Kirst, "Overcoming Educational Inequality" (see note 3).

69. Richard Romano and Martin Wisniewski, "Tracking Community College Transfers Using National Student Clearinghouse Data," Working Paper 36 (Cornell Higher Education Research Institute, 2003).
70. *Ibid.*
71. Goldhaber and Kiefer, "Higher Education and Inequality," table 1, p. 19 (see note 60), show that nearly half of all community college enrollment is in five large states—California, Florida, Illinois, Texas, and New York—and in all but New York, community college enrollments exceed enrollments in public four-year colleges. California alone has 24.4 percent of the nation's community college students, but only 9.2 percent of the nation's public four-year college enrollees.
72. Tinto, "Economic Inequality" (see note 43).
73. Pallais and Turner, "Access to Elites" (see note 45).
74. Kirst, "Overcoming Educational Inequality" (see note 3). Of course, were we to create policies to promote retention and persistence to a degree for low-income and low-qualification students, per student costs would be likely to increase.
75. Despite the positive impact of remediation on educational outcomes, these authors note that the institutional variation they exploit to obtain their results necessitates excluding from their sample the lowest ability students, who would be in remediation at any institution. The impact of remediation on these students is unknown. Bettinger and Long, "The Role of Institutional Responses" (see note 61); Eric P. Bettinger and Bridget Terry Long, "Addressing the Needs of Under-Prepared Students in Higher Education: Does College Remediation Work?" Working Paper 11325 (Cambridge, Mass.: National Bureau of Economic Research, 2005).
76. Mayer, "How Economic Segregation" (see note 14); Pell Institute, *Indicators of Opportunity* (see note 5); Haveman and Wilson, "Economic Inequality" (see note 28).
77. Thomas Garrett and William Poole, "Stop Paying More for Less: Ways to Boost Productivity in Higher Education," *Regional Economist* (Federal Reserve Bank of St. Louis, January 2006).
78. Pallais and Turner, "Access to Elites" (see note 45); McPherson, "Comments" (see note 45).
79. Bruce Chapman and Chris Ryan, "The Access Implications of Income Contingent Charges for Higher Education: Lessons from Australia," *Economics of Education Review* 24, no. 5 (2005): 491–512. In early 1993, the Clinton administration introduced broad-based reforms to student loan programs, including an option for students to adopt income-contingent repayments for some part of their student loan obligations, up to 20 percent of an agreed income. See Evelyn Brody, "Paying Back Your Country through Income-Contingent Student Loans," *San Diego Law Review* 31 (1994): 449–518.

# Children's Health and Social Mobility

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*Anne Case and Christina Paxson*

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## Summary

Children from low-income families are more likely than other children to have serious health problems. And, as Anne Case and Christina Paxson show, childhood health problems can prevent poor children from achieving economic success as adults.

Income-related disparities in childhood health are evident at birth or even before, and the disparities grow more pronounced as children grow older. Not only do poor children have more severe health problems than wealthier children, but they fare less well than wealthier children who have the same problems. They also receive less and lower-quality medical care for their problems. And poor families may be less well equipped to manage their children's health problems, which could worsen their effects.

The available U.S. data sets do not allow researchers to track individuals' health and economic well-being from birth into adulthood, but three British data sets are producing growing evidence that health in childhood is a determinant of educational attainment, which in turn affects adults' employment opportunities and wages. Children in poor health are also more likely to have poor health as adults, and their health as adults adversely affects their economic status.

Case and Paxson note that eliminating income-related disparities in health problems in childhood would do little to reduce earnings disparities between richer and poorer adults. However, they emphasize that, for children in poor health, improvement in physical condition in childhood would lead to substantial improvement in economic circumstances.

The authors cite several areas, including expanded prenatal care, maternal smoking cessation programs, and nutrition programs, as deserving particular attention. They contend that increased access to health care is not sufficient to improve children's health. The next wave of policies should focus on improving the quality of health care and strengthening the ability of parents to manage their children's health problems.

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**D**o health problems in childhood make it harder to achieve economic success in adulthood? The question is important for all children, but it is especially so for children from low-income families because they are more likely than other children to have health problems. An income-related gap in health is evident as soon as children are born, and it widens as they grow older. Although not all physical and mental health conditions are more common among low-income children, many of the most serious conditions are. Moreover, the health problems of lower-income children appear to be more poorly managed. The “double disadvantage” of low income and poor health may combine to prevent poor children from achieving economic success as they become adults.

Poor childhood health could limit economic success later in life for several reasons. One may be that children with health problems tend to be less well educated than other children: they may have greater difficulty learning and may leave school when they are younger. Another reason may be that less healthy children become less healthy adults. Adults in poor health may find it more difficult to hold down good jobs or to work as many hours as their healthy peers. Because poor health in childhood may affect economic success in adulthood in a variety of ways, we will discuss evidence on a range of adult outcomes, including schooling, health, and labor market success. The general thrust of the evidence is that health in childhood has long-term consequences for economic success.

Improving the health of children is a policy goal worth pursuing whether or not childhood health is related to adult economic suc-

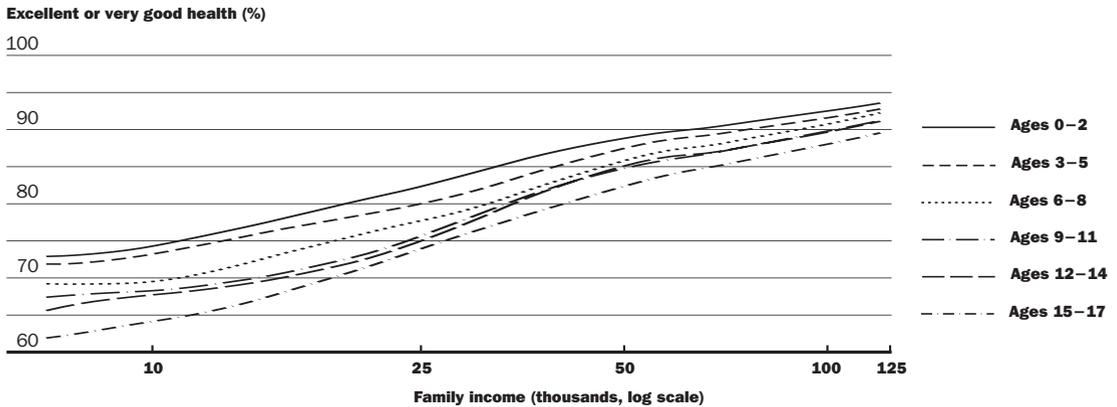
cess. But the research finding that children's health affects their standard of living as adults suggests the particular importance of policies and programs that improve the health of all children, and especially lower-income children. The challenge is to find programs and policies that work effectively against the causes of poor childhood health. Low income can lead to poor health in a variety of ways, including adverse prenatal conditions, poor nutrition, and poor management of health problems. Not all childhood health conditions are preventable or treatable. Not all have known causes. Given the many factors that influence children's health, it is unlikely that any single program or policy will dramatically affect either child health or adult success. That said, some policies and programs hold more promise than others. We discuss these in the final section.

### **The Relationship between Economic Status and Health in Childhood**

Numerous studies have analyzed the relationship between income and children's health. They have examined a variety of health measures, ranging from health status broadly defined to very specific health conditions experienced by children of different ages. A general conclusion is that lower-income children are more likely to be in poor health than are children from higher income groups.

### **Economic Status and Global Health Status**

The National Health Interview Survey (NHIS), a nationally representative annual survey of U.S. families, asks respondents (or, for children, their adult caregivers) whether they are in excellent, very good, good, fair, or poor health. The resulting summary measure of health, called global health status, although crude, is highly correlated with spe-

**Figure 1. Global Health Status and Family Income, by Age**

Source: National Health Interview Survey, 1997-2003.

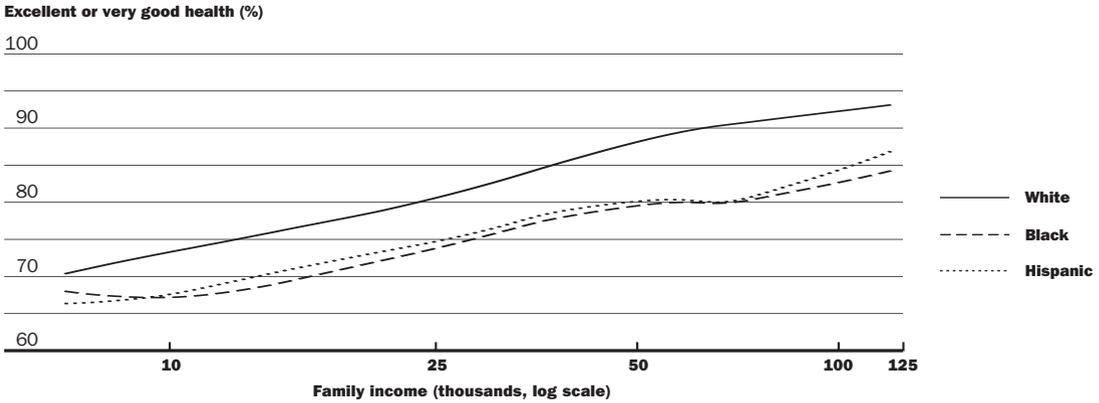
cific types of illnesses and health conditions in childhood. Adults who report poorer global health status are more likely than others to become ill and to die sooner rather than later.<sup>1</sup> Using the NHIS surveys conducted from 1997 to 2003, we estimate how parents' reports of their children's health vary with family income.<sup>2</sup> Figure 1, based on these estimates, charts the share of children of different ages and with different family income who are reported to be in excellent or very good health.

For all age groups, children from higher-income families are more likely than those in other income groups to be in excellent or very good health. Among children from birth to age three, for example, fewer than 75 percent of those with family incomes less than \$10,000 a year were in excellent or very good health, as against more than 90 percent of children with family incomes greater than \$100,000. The relationship between health and income is apparent throughout the income range: middle-income children are healthier than lower-income children, and upper-income children are healthier than middle-income children. Moreover, income-related differ-

ences in health become more pronounced as the children grow older. Among children from birth to age three, those at the highest income level are 21 percentage points more likely to be in excellent or very good health than those at the lowest income level. This difference increases to 29 percentage points for children aged fifteen to seventeen. Children from poorer families are substantially more likely than their wealthier peers to enter adulthood with health problems.

Other researchers report similar findings. An analysis we conducted with Darren Lubotsky, using three large nationally representative data sets—the Panel Study of Income Dynamics, the National Health and Nutrition Examination Survey, and earlier years of the National Health Interview Survey—documents both that children's health differs by family income and that the gaps widen as children age.<sup>3</sup> Paul Newacheck and several colleagues conclude that the health of teens from poorer families is worse than that of teens from wealthier families.<sup>4</sup> Elizabeth Goodman reaches a similar conclusion in examining participants in the National Longitudinal Study of Adolescent Health, a nation-

**Figure 2. Global Health Status and Family Income, by Race and Ethnicity**



Source: Same as figure 1.

ally representative data set in which adolescents rate their own health.<sup>5</sup> Other broad (and arguably more objective) measures of poor health—including days spent in bed because of illness, school days missed because of illness, and hospital episodes—also decline as income rises.<sup>6</sup>

These income-related differences in health are not attributable to differences in health insurance coverage. In an earlier study, we found that even among children who have private insurance, higher-income children are in better health than lower-income children.<sup>7</sup> Nor do these differences exist only in the United States: Janet Currie and Mark Stabile find a nearly identical link between children’s global health status and family income in Canada, which has universal health care.<sup>8</sup>

Finally, racial and ethnic differences in health status do not account for the income-related differences either. Using the same methods as for figure 1, figure 2 shows the share of black non-Hispanic, white non-Hispanic, and Hispanic children of various family incomes in excellent or very good health. African American and Hispanic children have worse global health status, on aver-

age, than white children with the same family incomes.<sup>9</sup> But within each racial and ethnic group, wealthier children are in better health. All the U.S. studies we have mentioned above also find strong links between family income and children’s health after adjusting for differences in health across race and ethnic groups.

### Socioeconomic Status and Birth Outcomes

Income-related disparities in childhood health are evident at birth or even before. Much research on this topic focuses on low birth weight, which provides a measure of the quality of both the intrauterine environment and the medical care received during pregnancy. Small newborns are categorized as being “low birth weight” (less than 2,500 grams), “very low birth weight” (less than 1,500 grams), or extremely low birth weight (less than 1,000 grams). Low birth weight stems from preterm birth (defined as less than thirty-seven weeks of gestation), prenatal growth retardation, or both. Almost all babies with very low birth weight are born preterm. Although low birth weight is not uncommon, only a small fraction of infants have very low and extremely low birth weights. In

2002, for example, 7.8 percent of infants had low birth weight; 1.5 percent, very low birth weight; and only 0.7 percent, extremely low birth weight.<sup>10</sup>

Low birth weight is associated with a variety of neurodevelopmental problems, including cerebral palsy, blindness, impaired lung function, and mental retardation. The smallest and most premature children are at much greater risk for these problems, though the rates of major disability among even the most premature infants (born at less than twenty-seven weeks of gestation) are relatively low. Only one-fifth to one-quarter of surviving infants born at less than twenty-seven weeks of gestation experience a major disability, including impaired mental development, cerebral palsy, blindness, or deafness.<sup>11</sup> Nevertheless, children born at very low birth weight without a major disability may have more subtle mental and emotional problems, such as attention deficit hyperactivity disorder (ADHD), behavioral problems, and reduced IQ. A recent review of the research concludes that infants who are low birth weight, especially those who are premature, have slightly lower IQs than normal-weight full-term babies.<sup>12</sup>

Children from low-income families are more likely than other children to have low birth weight. Among poor children, the rate of low birth weight is 10 percent, as against 6 percent among nonpoor children.<sup>13</sup> The National Health Interview Survey reveals similar income-related disparities in rates of low birth weight.<sup>14</sup> Among children with annual family incomes below \$30,000 (measured in 2000 dollars), 9.3 percent were born at low birth weight and 1.5 percent at very low birth weight. Rates for children with family incomes between \$30,000 and \$60,000 were 6.9 percent and 1.1 percent, respectively. For

children whose families earned more than \$60,000, 5.6 percent had low birth weight and 0.8 percent had very low birth weight. As with global health status, the disparity is not just between poor and nonpoor children; birth outcomes improve steadily with income.

That poorer children are more likely to be born at low birth weight suggests that socioeconomic differences in health emerge even before birth. Because it is difficult to measure fetal health directly, researchers have instead focused on factors that may affect fetal health, such as socioeconomic differences in prenatal care and the incidence of risky behaviors in pregnancy.<sup>15</sup> Much of this research uses maternal education rather than family income as the measure of socioeconomic status, because the former but not the latter appears on birth certificates, which typically provide the data for analysis.

The use of early and regular prenatal care varies widely by maternal education. According to the National Vital Statistics, 68 percent of women without a high school degree began prenatal care in the first trimester of pregnancy, compared with 81 percent of high school graduates and 91 percent of women with at least some college education.<sup>16</sup> An important goal of prenatal care is to inform women about proper nutrition during pregnancy, and it appears that this goal is not being met for women with lower socioeconomic status. For example, women with less education are more likely to have folic acid deficiencies (associated with spina bifida and other neural tube defects)—indicating either poorer diets or less use of vitamin supplements during pregnancy.

Analysts observe similar patterns for cigarette smoking during pregnancy, a behavior that has been implicated in preterm birth, in-

trauterine growth retardation, and subtle but long-lasting effects on cognition and behavior. According to recent statistics, 78 percent of pregnant women without a high school degree refrained from smoking during pregnancy, as against 83 percent of those who were high school graduates and 94 percent of those with at least some college education.<sup>17</sup> Although it is difficult to gather reliable information on alcohol and illegal drug use,

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*Lower-income children experience a broader set of specific health problems than do children from higher-income households.*

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women with less education also appear more likely to use alcohol and drugs during pregnancy. Self-reported rates of drug use, though, are low. Shahul Ebrahim and Joseph Gfroerer, using data from the National Household Survey on Drug Abuse, report that 2.8 percent of pregnant women surveyed between 1996 and 1998 reported using illicit drugs.<sup>18</sup> And during the 1980s and 1990s, although 20 percent of women reported consuming at least some alcohol during pregnancy, only 1.3 percent reported an episode of binge drinking.<sup>19</sup> Unless pregnant women greatly underreport binge drinking and illicit drug use, alcohol and drugs cannot account for much of the income-related differences in children's health at birth.

### **Socioeconomic Status and Health Conditions in Childhood**

Children experience a wide variety of health problems, from common ailments such as colds and upset stomachs to rare and more

serious conditions such as muscular dystrophy and cerebral palsy. Some problems appear shortly after birth; others develop later. But despite the diversity of these health conditions, lower-income children experience a broader set of specific health problems than do children from higher-income households.

Based on parent reports, nonpoor children are more likely than poor children to have only a handful of relatively minor health conditions, such as hay fever and sinusitis. Poorer children, by contrast, are more likely to have asthma, frequent headaches, heart conditions, kidney disease, epilepsy, digestive problems, mental retardation, and vision and hearing disorders.<sup>20</sup> Researchers comparing children in different social classes in the United Kingdom make similar findings.<sup>21</sup> Although many of these health conditions are rare, a substantial fraction of children have at least one. Paul Newacheck and Neal Halfon find that 9.6 percent of poor children and 5.7 percent of nonpoor children under age eighteen suffer from a disability, defined as a physical or mental health condition that limits their activities.<sup>22</sup> Some mental health and cognitive problems, such as learning disabilities and developmental delays, are also more common among poor than among nonpoor children.<sup>23</sup> Evidence on depression is mixed. Research using a nationally representative survey of adolescents finds that poorer adolescents are more likely to experience depressive symptoms.<sup>24</sup> A comparative review of studies based on the Children's Depression Inventory, however, finds no link between socioeconomic status and depression in children and adolescents.<sup>25</sup>

### **Socioeconomic Status and the Effects of Health Problems on Children**

Not only are poor children more likely to have a variety of health problems, they also

fare less well than wealthier children who have the same problems. Consider, for example, two children with asthma, one from a low-income family and the other from a high-income family. The low-income child will be more likely to be reported in poor health, to spend more days in bed, and to have more hospital episodes.<sup>26</sup> Similar patterns emerge for other serious (although less common) health conditions, such as diabetes and epilepsy. A study of air pollution and children's asthma in California finds that poorer children are not only exposed to more pollution, but also more likely to be hospitalized than nonpoor children who live in similarly polluted areas.<sup>27</sup>

Poorer children could fare worse than wealthier children with the same health conditions for several reasons. First, there is evidence that poorer children receive less and lower-quality medical care for their problems. Poor children are less likely than nonpoor children to have a usual source of health care.<sup>28</sup> Even when poor children have a usual source of care, they are less likely to have continuity of care with a particular primary physician. They are also significantly less likely to be vaccinated for measles and to have received medical attention for specific acute health conditions, including pharyngitis, acute earache, recurring ear infections, and asthma. Second, poor families may be less well equipped to manage their children's health problems. Many such problems, including asthma and diabetes, require a great deal of parental oversight. Parents of children with asthma, for example, must monitor medications and keep their homes free of dust mites and tobacco smoke, which can exacerbate asthma. Parents of children with diabetes must carefully monitor blood glucose levels, administer insulin, and provide an appropriate diet. Evidence for selected child-

hood health conditions indicates that poorer families are less likely to comply with medical protocols, which could worsen the effects of health problems.<sup>29</sup>

### **Do Children's Health Problems Affect Family Income?**

Although poor childhood health and low income are linked, it could be that low income does not cause the poor health. It is possible that the relationship runs the other way—that children's health problems lower family incomes. Mothers with sick children may be more likely to stay home rather than work; the stress of having a sick child may lead to a marital break-up that strains family finances; single mothers with sick children may find it more difficult to find new partners to bring income into the household.

Researchers have found mixed support for these hypotheses. For example, Hope Corman, Nancy Reichman, and Kelly Noonan, using a sample of primarily low-income single mothers, find that mothers with children born in poor health are about 10 percentage points less likely than mothers with healthy babies to be working when their children are twelve months old. And when these mothers are employed, they typically work about four fewer hours a week.<sup>30</sup> Some researchers find that single mothers with a disabled child work fewer hours than other mothers.<sup>31</sup> But others conclude that mothers of children born in poor health are no less likely to work in the three years following the child's birth.<sup>32</sup> Research on the effects of children's health on family structure yields somewhat more consistent evidence, at least for the United States. Angela Fertig, using two nationally representative U.S. data sets, concludes that parents of children born in poor health are more likely to divorce.<sup>33</sup> That finding, however, does not hold true in Britain.

Another study of primarily low-income women who are unmarried when their children are born finds that the mothers of children born in poor health are less likely to be cohabiting or married when their children are a year old.<sup>34</sup>

Interpreting these findings is complicated because unobserved factors that affect child health could also affect maternal labor supply and family structure. For example, mothers with drug or alcohol problems may be more likely to have children with health conditions and also more likely to divorce. But no matter how these findings are interpreted, several pieces of evidence argue strongly against the theory that reductions in family income caused by a child's poor health can explain the observed link between child health and socioeconomic status. First, as noted, children whose parents have less schooling are more likely to be born into poor health. But except for very young parents, children's health problems cannot lower their parents' educational attainment. Second, our study conducted with Darren Lubotsky shows that the link between child health and family income after the child's birth is the same as that between child health and family income *before* the child was born.<sup>35</sup> A child's poor health cannot possibly lower the family's income before the child's birth, or at least before conception. Thus, we do not believe that the link between low income and poor childhood health is attributable to the fact that children's poor health lowers their families' income.

### Consequences of Childhood Health for Economic Success in Adulthood

Health problems in childhood can affect economic success in adulthood in two main ways. First, they can influence educational

attainment, which in turn affects employment opportunities and wages—subjects investigated in other articles in this volume. Second, poor childhood health can affect adult health, which, again, affects employment and wages. Even when differences in education are taken into account, it may be that adults in poor health are less likely to be employed and more likely to command lower wages than healthy adults.<sup>36</sup>

Measuring the long-run effects of childhood health is complex. The ideal test of whether health in childhood has causal effects on economic status in adulthood would be a controlled experiment in which childhood health interventions are randomly assigned and adult economic outcomes are later observed. Such experiments are now under way and will eventually be able to document long-run effects of health interventions, though not for forty or fifty years in the case of many outcomes of interest.<sup>37</sup> And because these experiments are being conducted in developing countries, the findings may not generalize to the United States and other industrialized countries.

In the absence of such controlled trials, researchers generally analyze large data sets that follow children from infancy through to adulthood and use the temporal order of events to demonstrate causal effects of chronic conditions and ill health in childhood on economic status in adulthood. Complicating such analyses, childhood health and adult economic status may both be subject to influence by many of the same factors, which may not be observable to researchers. Childhood socioeconomic status, for example, has important effects on childhood health. And as other articles in this volume make clear, childhood socioeconomic status also has important effects on economic status in adult-

hood. Unless researchers can take into account an adult's socioeconomic status in childhood, they might attribute that adult's economic status to childhood health when it is instead attributable to childhood economic status. Similarly, other factors, such as genetic makeup or early life events, which researchers cannot observe, may lead some people to be healthy and wealthy and others to be sick and poor.

To take into account such "third factors" that may influence both health and economic well-being, researchers often include many household and individual control variables in their statistical analyses. These analyses require rich long-term data sets that follow the same people through time and carefully monitor their health, schooling, and economic status. Several such data sets follow children over time, making it possible to examine how health is related to progress through school. But data sources that can be used to examine how childhood conditions affect outcomes much later in adulthood are much rarer. No U.S. data set currently makes it possible to track people's health and economic well-being from birth through middle age and into retirement. The British, however, have been following three birth cohorts—the 1946 National Survey of Health and Development (NSHD), the 1958 National Child Development Study (NCDS), and the 1970 British Cohort Study. Data from the latter two cohorts are publicly available, and children from the NCDS are now old enough to enable researchers to examine the effects of childhood health on economic outcomes in middle age.

The NCDS has followed all children born in Great Britain during the week of March 3, 1958, from birth to age forty-two. At the time of the birth, mothers were asked a battery of

questions about their prenatal behaviors and socioeconomic status. The study collected data on their children's health, chronic conditions, socioeconomic status, and education at ages seven, eleven, sixteen, twenty-three, thirty-three, and forty-two. It assessed childhood health by medical exams. An important measure of educational attainment in these data is the number of O-level exams a child passed at age sixteen. Passing five or more

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O-level exams, a feat accomplished by only 20 percent of the NCDS cohort, qualifies students to continue academic studies until age eighteen, when they take A-level subject exams that determine admission to university. A statistical analysis of the data that takes into account differences in family background and parents' characteristics finds that for men in the NCDS, each O-level passed at age sixteen is associated with an 8 percent increase in reported wages at age thirty-three. The exams thus provide an excellent marker for future economic success.

### **Childhood Health and Educational Attainment**

Children in poor health may be less school-ready than other children. In addition to being less able to learn at school, they may miss more school days because of illness and may complete fewer years of schooling over-

all. Their poorer schooling, in turn, could limit their earning potential, quality of life, and possibly their health as adults. A small but growing literature indicates that health in childhood is in fact a determinant of cognitive ability and educational attainment.<sup>38</sup>

Some recent evidence indicates that educational attainment is affected by children's health at the time of birth. Among NCDS cohort members, there are strong links between fetal conditions and educational attainment.<sup>39</sup> Children born at low birth weight pass 0.5 fewer O-level exams, on average, than normal-weight children—a finding consistent with evidence, already noted, that children born at low birth weight are at greater risk for cognitive and behavioral problems that could make it more difficult for them to do well in school.

Maternal smoking during pregnancy is also linked with significantly fewer O-level passes, with cohort members whose mothers reported heavy smoking during pregnancy passing 0.4 fewer O-level exams, on average. These findings may reflect the role of the fetal environment and, more specifically, the effect of smoking during pregnancy on prenatal and later cognitive development. Maternal smoking while pregnant is also linked with behavioral and cognitive problems in older children, including lower IQ and ADHD, all of which negatively affect a child's educational attainment.<sup>40</sup> Animal studies have also found that prenatal nicotine exposure causally affects brain development.<sup>41</sup> But the NCDS research cannot rule out the possibility that the link between prenatal smoking and lower educational attainment is due to “third factors,” such as unobserved characteristics of the women who smoked during pregnancy that affect their children's development.

Part of the link between poor childhood health and poor school performance may be attributable to poor nutrition. In a study of Peruvian children, Douglas Berkman and several colleagues find that those who suffered from malnutrition in early childhood tended to have poorer cognitive function at age nine.<sup>42</sup> Although malnutrition and vitamin deficiency are rare in U.S. children, anemia poses a serious risk to children from low-income households.<sup>43</sup> And iron deficiency may lead to attention deficits and poorer academic performance.<sup>44</sup> Jay Bhattacharya and several colleagues use data from the National Health and Nutrition Examination Survey to document the extent to which children in poorer families have poorer diets and higher levels of serum vitamin deficiencies.<sup>45</sup> A review of evidence on the effects of the Special Supplemental Program for Women, Infants, and Children (WIC), which provides nutritious foods and infant formula to pregnant women and young children, finds that WIC has many benefits for children.<sup>46</sup> Numerous studies have found that children exposed to WIC tend to have higher birth weights, consume more important nutrients, have less anemia, and (in two studies reviewed) have higher scores on a test of receptive language ability. Identifying the effects of WIC is difficult, though, because children who enroll may be systematically different from those who do not. These findings, although promising, must therefore be treated with some caution.

Chronic health conditions also put children at higher risk for poorer educational outcomes. In a study of the NCDS cohort that we conducted with Angela Fertig, we looked at the number of chronic conditions a child faces at ages seven and sixteen and his or her O-level performance.<sup>47</sup> We found, taking into account household and parental characteris-

tics, that for each chronic condition reported at age seven, a child passes on average 0.3 fewer O-level examinations at age sixteen, and for each condition reported at age sixteen, a child passes on average an additional 0.2 fewer O-levels. That chronic conditions at age seven are linked with O-level performance, even holding constant chronic conditions at age sixteen, suggests that the damage caused by chronic conditions may be cumulative in its effect on education. Paul Gregg and Stephen Machin, also using the NCDS data, find that cohort members who at age sixteen report being sick in the past year—with either minor or more serious ailments—are significantly less likely than others to stay on in school.<sup>48</sup>

Different types of childhood conditions have different effects on the O-level measures in the NCDS. Children with physical impairments (such as general motor handicaps or limb impairments) do not have fewer passes, although those with physical health problems other than impairments do. Mental and emotional conditions are particularly significant. A mental or emotional condition at age seven that persists through age sixteen is associated with 1.2 fewer O-level passes.

Janet Currie and Mark Stabile, using two large long-term surveys conducted in the United States and Canada, find that ADHD has similar effects on academic success.<sup>49</sup> Children with ADHD are significantly more likely to repeat grades and to perform poorly on reading and math tests. Currie and Stabile do not rely on parental reports of whether a child had been diagnosed with ADHD. (Such reports could produce biased results, in that children who are doing poorly in school might be likely to be tested for and diagnosed with ADHD.) Rather, they “diagnose” ADHD using a symptom checklist completed

by all parents participating in the surveys. Children classified as having ADHD, with a score of 8 or higher on the hyperactivity index, have math and reading test scores that are, on average, a quarter of a standard deviation lower than those of other children.

Despite much evidence that physical and mental health problems in childhood impede

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academic success, this finding is far from universal. Asthma, one of the most common childhood ailments, is a case in point. A recent review of studies of the long-run consequences of childhood asthma concludes that children who experience asthma symptoms do miss more days of school, on average, than their peers without asthma; estimates (from the twenty studies reviewed) range from an additional 2.1 to 14.8 days a year.<sup>50</sup> But the missed school days do not appear to translate into worse academic outcomes. Only twelve studies examined the effects of asthma on academic achievement. Although they focused on different measures of academic achievement, including standardized test scores, school grades, grade failure, and educational attainment, none found differences between children with and without asthma. The impact of asthma may depend on a household's ability to cope with children's medical needs. For example, data from the National Health Interview Survey show that asthmatic children from low-income families are at greater risk of grade failure than nonpoor children.<sup>51</sup> This finding is consistent with evidence that poor children

with chronic health conditions (including asthma) progress through school more slowly than do wealthier children with the same number of conditions.<sup>52</sup>

Another worrisome childhood health condition is obesity, the prevalence of which among U.S. children rose from 5 percent in the 1970s to more than 15 percent in the late 1990s.<sup>53</sup> This increased incidence is prompt-

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ing new research on the health and economic consequences of childhood obesity, though little reliable evidence yet exists on how obesity affects academic achievement. One study finds that children who are overweight in kindergarten tend to have poor kindergarten and first grade test scores, but the link vanishes once the study takes into account socioeconomic and behavioral measures.<sup>54</sup> The study thus highlights the correlation of childhood health with socioeconomic characteristics and other factors associated with academic success. Research that cannot adequately take into account these factors may seem to suggest that child health affects later outcomes, even when no such effect exists.

## Childhood Health and Adult Health

Children in poor health are more likely to become adults in poor health, which may lead them to have lower incomes. An intriguing, relatively new, line of research hypothesizes that poor nutrition *in utero* leads to greater risk of chronic disease, particularly cardiovascular disease and non-insulin-dependent diabetes, in middle age and later. The “fetal origins hypothesis” suggests that insults to intrauterine health, particularly during key developmental stages, may result in long-term damage to an organism that may not be apparent until middle age.<sup>55</sup> The evidence on this hypothesis is mixed: some adult health outcomes in some settings are associated with earlier uterine nutrition deficits, but many others are not. Kathleen Rasmussen, in an exhaustive review of the research, finds little evidence that intrauterine health explains chronic diseases in middle age.<sup>56</sup> She concludes that programs to improve maternal nutrition are likely to have a much smaller effect on cardiovascular disease and diabetes than would other sorts of programs—those pertaining to lifestyle choices in adulthood, for example—even if researchers ultimately come to agree that nutrition *in utero* significantly protects against chronic disease later in life. That said, she supports improving maternal nutrition, regardless of its effect on cardiovascular disease and diabetes.

Though questions remain about the fetal origins hypothesis, there is clear evidence that health problems in adulthood may have their origins in childhood. The NCDS shows that chronic conditions in middle childhood did not significantly affect health in adulthood for members of the 1958 cohort unless these conditions persisted into adolescence.<sup>57</sup> A chronic condition at age seven that had disappeared by age sixteen showed no effect on health reported at ages thirty-three or forty-

two. But conditions present at age seven that continued into adolescence and those developed between ages seven and sixteen had large and lasting effects on health reports in middle age. Other evidence comes from the literature on obesity. Robert Whitaker and several colleagues show that obese children are more likely than nonobese children to become obese as adults, especially if one or both of their parents are obese.<sup>58</sup> Thus, obesity that develops in childhood may lead to adult obesity and its attendant health problems, including cardiovascular disease and diabetes.

Less healthy children, then, are at an elevated risk of becoming less healthy adults. But for poor childhood health to affect adults' *economic* outcomes, it must be that poor health in adulthood undermines adults' economic success. A vast literature links poor health and low income in adulthood: poorer adults are more likely than nonpoor adults at each age to die from almost all causes of disease and to experience a wide variety of health conditions, including heart disease and depression. Anne Case and Angus Deaton show that people in the bottom quartile of the income distribution at age twenty report worse health than do those in the top quartile at age fifty.<sup>59</sup> The question is whether low income causes poor health or poor health causes low income (or neither). Debate on the subject is vigorous, with epidemiologists generally favoring the "income-to-health" hypothesis and economists favoring the "health-to-income" hypothesis.<sup>60</sup> The two hypotheses need not be mutually exclusive, however, and for our purposes it is important only to examine evidence that poor health in adulthood adversely affects economic outcomes.

Many researchers have studied how health in adulthood affects performance in the labor

market. After reviewing this research, Janet Currie and Brigitte Madrian conclude that the estimates of the effect of poor adult health on labor market performance vary widely and depend heavily on the measure of health chosen and the method of analysis used.<sup>61</sup> Existing studies often focus too narrowly (on older white males, for example) or too broadly (lumping all adults together, for example), thus making it difficult to see whether effects vary across demographic groups. Overall, research tends to find that poor adult health affects the number of hours worked more than it affects wage rates. Similarly, Case and Deaton find that income-related differences among U.S. adults in self-reports of poor health are driven mainly by health-related absences from the labor force.<sup>62</sup> Mental illness and alcoholism have particularly large effects on work hours and earnings. More recently, researchers focusing on the effects of obesity on wages have found that heavier women fare less well in the labor market.<sup>63</sup> John Cawley, for example, finds that heavier white women have lower wages than other women, perhaps because of lower productivity or discrimination, or both. This wage difference remains when he takes into account differences in schooling.

This research shows that health problems in adulthood adversely affect economic status, primarily through work hours and employment, but it does not provide direct evidence that *childhood* health problems have long-lasting effects on economic status in adulthood. This topic has been addressed in only a handful of papers that rely on the NCDS. Janet Currie and Rosemary Hyson show that children born at low birth weight are less likely to be employed at age thirty-three.<sup>64</sup> Because they also find that adults who were born with low birth weight have lower educational attainment, it is possible that the

poorer schooling of this group lowers their employment rates. Other evidence indicates that adults with chronic conditions in childhood are significantly less likely to be in the labor force.<sup>65</sup> For men in the NCDS, each chronic condition at age sixteen lowers the probability of labor force participation at age forty-two by 5 percentage points. Of all the childhood characteristics captured in the NCDS—parental education and socioeconomic status, the uterine environment, and childhood chronic conditions—the number of chronic conditions is the most important in explaining who is and is not in the labor force at age forty-two. More generally, for men in the NCDS, chronic conditions in childhood are also closely linked with lower socioeconomic status in adulthood (a measure based on a person's occupational class but not necessarily income). Even for men who have the same number of O-level passes, those with chronic conditions in childhood have lower socioeconomic status. These findings provide direct evidence that childhood health matters for economic outcomes in adulthood.

### Implications for Policy

Childhood health problems are of concern whether or not they affect adult success. However, if childhood health has a large effect on adult economic success, it is all the more important to identify policies to prevent or treat these problems or to cushion their effects. Although it is not yet possible to provide a single comprehensive estimate of the long-run effects of poor health in childhood, it is possible to derive rough calculations of some specific effects on economic status in adulthood.

We start by considering the long-run effects of health at birth. Evidence from the NCDS links low birth weight and prenatal smoking with lower educational attainment. A British

child born at low birth weight passes (on average) 0.5 fewer O-level exams at age sixteen, taking into account childhood socioeconomic status.<sup>66</sup> And, for men, each O-level pass is linked with an 8 percent increase in earnings at age thirty-three. Combined, these two estimates (which we assume represent causal effects) imply that being born at low birth weight leads to 4 percent lower earnings at age thirty-three. Similarly, children whose mothers smoked heavily when pregnant pass on average 0.4 fewer O-level exams, translating into a 3.2 percent earnings deficit. A similar calculation can be made for chronic childhood health conditions. Children who have a chronic condition at age seven and age sixteen on average pass 0.5 fewer O-level exams, which implies a 4 percent reduction in earnings. These reductions will be even larger if low birth weight, prenatal exposure to nicotine, and chronic conditions also influence earnings by affecting adult health and work hours (holding educational attainment fixed).

Although these calculations indicate that childhood health may have a large effect on adult economic success, eliminating income-related disparities in health problems in childhood would do little to reduce earnings disparities between richer and poorer adults. Low birth weight illustrates this point. As noted, the rate of low birth weight is 10 percent among poor children and 6 percent among nonpoor children. Closing that gap would, on average, increase the earnings of poor children less than one-fifth of 1 percent.<sup>67</sup> Similarly, rates of prenatal smoking are 12 percent for mothers with less than high school degrees and 6 percent for those with college degrees. Closing that gap would also have relatively small effects on the implied earnings differences between the children of more and less highly educated moth-

ers. Thus, although health has large effects on adult outcomes, equalizing health disparities between wealthier and poorer children would not significantly affect their later earnings disparities.

## Policies and Programs

Improving children's health is likely to have payoffs in terms of greater economic success in adulthood. The challenge for policymakers and practitioners is to identify policies and programs that improve health at low cost. Although a systematic review of evidence on this matter is beyond the scope of this article, several areas deserve particular attention.

### Prenatal Care

Children born at low birth weight to mothers who smoke have lower educational attainment and (as a consequence) lower earnings as adults. Differences in the rates of low birth weight among poor and nonpoor children are small, and reducing the rate among poor children will do little to close the gap between rich and poor in adulthood, but policies that improve fetal health may have a high payoff to the individuals concerned.

One possible policy is to expand prenatal care. Surprisingly, however, evidence is mixed on whether prenatal care produces healthier babies, and in particular reduces the likelihood of low birth weight. In 1985 the Institute of Medicine issued an influential report titled *Preventing Low Birth Weight*, which concluded that early and high-quality prenatal care reduced the incidence of low birth weight.<sup>68</sup> The report strongly supported expanding prenatal care. But more recent research sees less promise in expanding prenatal care *as now practiced*.<sup>69</sup> As an article in an earlier *Future of Children* volume on low birth weight concludes, "The collective evidence suggests that adequate pre-

natal care is associated with reduced rates of low birth weight but mainly among more mature full-term infants. Unfortunately, prenatal care has consistently been shown not to prevent fetal growth retardation among less mature preterm infants or to prevent preterm birth."<sup>70</sup> Most of the serious health problems, however, are concentrated among small preterm infants—those whom prenatal care is least likely to help.

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Further evidence on the effects of prenatal care on birth outcomes comes from expansions in Medicaid eligibility starting in 1984. By 1990, federal law required states to provide Medicaid to pregnant women with incomes up to 133 percent of the poverty line. Janet Currie and Jonathan Gruber show that the Medicaid expansions increased the intensity of treatment at birth (Cesarean section deliveries, fetal monitoring, induction of labor, and use of ultrasound) among teen mothers, high school dropouts, and unmarried mothers—all groups that would have largely been uninsured if not for Medicaid.<sup>71</sup> But at the same time, treatment intensity fell for better educated women, who may have lost access to private insurance as a result of the Medicaid expansions. During the 1990s welfare reform moved women out of welfare and off Medicaid. Although these policy changes resulted in reduced prenatal care for

both white and black women, they had no effect on birth weight and only a modest effect on fetal deaths.<sup>72</sup> The difficulty in assessing the effects of the Medicaid expansions is that Medicaid may increase access to prenatal care *and* improve the quality of medical care infants receive at birth. The finding that the expansions reduced infant mortality and fetal death without improving birth weight might suggest that their major benefit was to keep premature infants alive through better medical care, rather than to prevent prematurity.

The evidence on smoking cessation programs during pregnancy is less equivocal. A recent review of sixty-four randomized trials of smoking cessation programs for pregnant women finds that forty-eight resulted in reductions in smoking.<sup>73</sup> In addition, children born to women in these programs were less likely than the children of women in the control groups (who were not offered programs) to have low birth weight or to be born prematurely. Overall, these studies found no significant effects of smoking cessation programs on very low birth weight, stillbirths, or perinatal or infant mortality. The samples used in these studies were generally too small to detect effects on these relatively rare outcomes.

It may seem surprising that smoking cessation programs prevent preterm birth and that prenatal care does not. After all, counseling women on tobacco use while pregnant would seem to be part of high-quality prenatal care. But prenatal care as now practiced may not give pregnant women who smoke adequate help in quitting or cutting back. Recent expansions in Medicaid coverage for smoking cessation may improve results. In 1998 Medicaid covered tobacco-dependence treatment in only twenty-four states; by 2001 that number had grown to thirty-six.<sup>74</sup> But only 60 percent of Medicaid physicians in those

states knew that coverage existed. We know of no published studies that examine whether Medicaid coverage for smoking cessation reduces smoking among pregnant women or improves birth outcomes. The effects are likely to depend on the quality of the programs and how widely they are used.

### Nutrition

The research finding that improving maternal and child nutrition may improve childhood health and cognitive development raises the question of which nutrition policies and programs have been most effective and whether to expand them. Currie provides a comprehensive review of the three leading U.S. child nutrition programs: the Food Stamp Program, the national school meal program, and WIC.<sup>75</sup>

Each of these programs appears to have produced some health benefits for children. Of the three, the evidence for food stamps appears most mixed—some studies find benefits, others do not. Evidence on the health benefits from WIC is more consistently positive. Much of the research links participation in WIC with low rates of low birth weight: WIC participants, on average, are 10 to 43 percent less likely to have a low birth weight baby. Because WIC provides infant formula, it reduces the probability that women will breast-feed, but for infants of mothers who choose not to breast-feed, WIC seems, by delaying the introduction of solid foods and cow's milk, to provide a better diet than they would otherwise receive. Some researchers argue that WIC is responsible for reducing anemia among poor children.

The meals of children who participate in the national school lunch program are higher in nutrients than those of children who do not, although these benefits may be offset in part

by the quality of nutrition received out of school. Currie found no studies that examined the effects of the program on school performance. In another review of research, Eileen Kennedy and Carole Davis conclude that whether a child's school participates in the school breakfast program does not significantly affect whether a child eats breakfast from any source.<sup>76</sup> Among the reasons cited why children do not participate in the program are lack of time before class, the early timing of the breakfast, and social stigma. Kennedy and Davis note that numerous studies evaluate the program's effect on the nutritional status of participants, but that many of them lack a control group against which to compare participants (and those eligible to participate). Only a few studies try to evaluate how the program affects cognitive development. Although some find that it improves school attendance and test scores, Currie and Kennedy and Davis reserve judgment, given the lack of adequate control groups.

### Health Care and Health Management

A conviction that improving children's access to health insurance should materially improve their health was one of the driving forces behind the dramatic expansion of Medicaid eligibility during the 1980s and 1990s, and many researchers have indeed documented that better access to insurance increases use of medical care. Paul Newacheck and several colleagues, for example, find that uninsured children are significantly less likely to have a usual source of care or to have access to a regular physician or to care after normal business hours.<sup>77</sup> Currie and Gruber show that the Medicaid expansions increased the use of care delivered in doctors' offices.<sup>78</sup>

Nevertheless, assessments of whether increased use of care improves health for poor and near-poor children are mixed, at best.

Robert Kaestner, Theodore Joyce, and Andrew Racine find that black and Hispanic mothers assess their children's health more positively if they have access to either Medicaid or private insurance.<sup>79</sup> Access to insurance has no effect on the maternal health assessments of white children. Access to Medicaid or private insurance did not reduce

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*The meals of children who participate in the national school lunch program are higher in nutrients than those of children who do not, although these benefits may be offset in part by the quality of nutrition received out of school.*

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days in bed in the past twelve months for any group. The authors speculate that Medicaid may be helpful only for specific illnesses, and they conclude that insurance does not have a strong measurable effect on health. And data from the National Immunization Survey for 1995–2001 suggest that the State Children's Health Insurance Program (SCHIP) has not led to improved immunization rates for most childhood illnesses—the exception being a significant improvement in rates for the varicella (chicken pox) vaccine.<sup>80</sup>

The lack of evidence that Medicaid and SCHIP improve children's health, along with the findings already noted on the income-related differences in children's health in countries (such as Canada and the United Kingdom) that provide universal health care,

suggest that a sole focus on access to health insurance would be misplaced. Parents, generally mothers, are the primary gatekeepers for their children's health.<sup>81</sup> If a mother does not understand the medical protocol she should follow during a child's asthma attack, for example, her child may fare poorly, even if the medical attention the child receives in the physician's office is adequate. Poorer or less well educated mothers may leave a doctor's office with a less clear idea of how to protect their children's health—either because the doctor discriminates in the advice he or she administers to parents, based on their socioeconomic status; or because poorer mothers are intimidated and do not ask questions when they do not understand the physician's advice; or because the physician's advice is more difficult to follow when household resources are stretched and time is scarce. That visits to the doctor may be less productive for poor and near-poor children is consistent both with the income-related differences in children's health and with the apparent failure of Medicaid expansions to improve poor children's health even though they increased the use of care. What is needed is dedicated survey work that documents how carefully the baton is passed from physician to primary caregiver, for children across the economic spectrum.

## Conclusions

Although poor health is only one of many factors that can limit a child's ability to achieve economic success as an adult, the evidence discussed in this article indicates that it may be an important one. Children in poor health are more likely than those in good health to leave school early and to achieve lower socioeconomic status as adults. Moreover, the disadvantages that come with poor health may be more pronounced for lower-income children. The link between childhood health and adult success is yet another reason to develop policies and programs that improve health for all children.

Although the benefits of improving children's health are clear, how best to do so is less certain. Previous policies have focused on increasing health insurance coverage for lower-income pregnant women and children. Although health insurance coverage may be essential for children's health, evidence on recent expansions of Medicaid indicates that it is not sufficient. The available evidence makes a strong case for the next wave of policies to focus on improving the quality of prenatal health care and service delivery and strengthening the ability of parents to manage their children's health problems.

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# “Culture” and the Intergenerational Transmission of Poverty: The Prevention Paradox

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*Jens Ludwig and Susan Mayer*

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## Summary

Many U.S. policymakers support changing the “culture” of poor parents to encourage marriage, work, and religion as a means to end the intergenerational transmission of poverty. In this article Jens Ludwig and Susan Mayer review and evaluate research on how parental work, marriage, and religion affect children’s socioeconomic status as adults, as well as on the likelihood that changing these indicators of parental behavior will reduce poverty in the next generation. They conclude that even if policymakers were able to ensure that all children had married, working, and religious parents, the result would be a far smaller reduction in poverty among the children’s generation than many people believe.

The explanation for this “poverty-prevention paradox,” say Ludwig and Mayer, is that the poverty rate in the children’s generation depends not only on how many poor children grow up to be poor adults, but also on how many nonpoor children grow up to be poor adults. Reducing the chances that poor children become poor adults will dramatically lower future poverty rates only if most poor adults begin life as poor children. But most poor adults grow up as nonpoor children in the type of “pro-social” households that policymakers are pushing to attain. Moreover, little good evidence supports the idea that such parental behaviors as marriage, work, and religious adherence have strong causal effects on children’s long-term economic success.

The authors argue that encouraging positive social behaviors in the parents of poor children is a worthwhile goal in its own right. But they stress that policymakers should recognize the limits of this strategy for reducing poverty among future generations. There may be no substitute for a system of social insurance and income transfers for those children who do wind up poor as adults.

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*Throughout history, societies around the world have been poor, with inadequate educational opportunities and with socially excluded people. Those same societies have been remarkably successful at ensuring that almost all children came into the world with two biological parents committed to their care. That's the difference between societies with small underclasses (for every society has had an underclass) and with large ones.*

Charles Murray, 2005

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A primary goal of contemporary U.S. social policy is to reform the “culture” of poor parents to make it less likely that their children will grow up to be poor. Because the indicators of culture that policymakers usually emphasize are marriage, work, and religion, in this paper we assess how much poverty rates in the children’s generation would fall if all children had married, working, and religious parents. Research in this area is less informative than one might expect. Little empirical research estimates the relationship between parents’ marriage, work, and religion and children’s eventual income as adults, and in our view much of that research is seriously flawed. Our own estimates show that changing these three aspects of family culture will reduce poverty in the children’s generation much less than many policymakers, policy analysts, and voters seem to believe.

The public’s concern about intergenerational economic mobility appears to spring from a desire to see that children are not condemned to a lifetime of poverty just because they were born to poor parents. Many public discussions assume (as the quote above suggests) that reducing poverty among future generations and

reducing the intergenerational transmission of poverty are equivalent goals. They are not. The poverty rate in the children’s generation depends not only on how many poor children grow up to be poor adults, but also on how many nonpoor children grow up to be poor adults. Reducing the chances that poor children become poor adults will dramatically lower future poverty rates only if most poor adults begin life as poor children. Even if parental work, marriage, and religion improve children’s economic future as adults, getting all parents to work, marry, and attend religious services would not cause poverty to plunge in the next generation because most poor adults do not grow up in families headed by parents who are unmarried, do not work, and do not attend religious services.

Epidemiologists often encounter a similar problem in fighting disease.<sup>1</sup> As Geoffrey Rose puts it, “a large number of people at a small risk may give rise to more cases of disease than the small number who are at high risk,” which limits what might be accomplished by focusing on high-risk cases.<sup>2</sup> Public policies that seek to end tomorrow’s poverty by changing today’s parental culture encounter a similar problem. We call this the poverty-prevention paradox.

## **Public Policy and the Intergenerational Transfer of Poverty**

Policy proposals to reduce the intergenerational transfer of poverty focus on three broad areas: schools, neighborhoods, and families. Cecilia Elena Rouse and Lisa Barrow discuss the role of schools in their article in this volume. We briefly discuss research on the relationship between children's neighborhoods and their economic success as adults before turning to the role of families, particularly the relationship between parents' marital status, work, and religion and their children's chances of being poor as adults.

### **Neighborhoods**

Surprisingly little is known about the effect of children's neighborhoods on their economic status as adults. Most researchers focus on how neighborhoods affect child or adolescent outcomes—outcomes that are only modestly correlated with the children's economic status as adults.<sup>3</sup> In addition most of the research is "nonexperimental"—that is, its subjects are not randomly assigned to different neighborhood environments. Instead, the research simply compares children whose families live in different neighborhoods. Such an analytical approach, however, risks finding links between the children's outcomes and the neighborhoods themselves when the outcomes are instead due to something about the parents who choose to live in certain neighborhoods.<sup>4</sup> A different approach taken by some researchers is to consider the correlation, or similarity, in outcomes of children growing up within a few blocks of one another. One study found that the correlation in the years of schooling of children living in the same neighborhood is around 0.1 (where perfect correlation would be 1), which suggests a fairly limited role for neighborhood influence—at least on average across a nationally representative sample.<sup>5</sup>

Even if neighborhoods have little effect on average, the consequences of growing up in America's most disadvantaged urban communities could be important for those at the bottom of the income distribution—a possibility that has generated particular concern in public discussions.<sup>6</sup> Yet even here the influence of neighborhoods on many childhood outcomes may be surprisingly modest, at least according to available data from the U.S. Department of Housing and Urban Development's Moving to Opportunity (MTO) demonstration. The MTO program overcomes the self-selection problem by randomly assigning low-income, mostly minority families into groups that are offered different forms of treatment. It thereby creates substantial differences in neighborhoods among otherwise comparable groups of poor parents and children.

Although evaluations of MTO after four to seven years find that moving to less disadvantaged communities reduces risky and criminal behavior in girls, they find that such moves on balance increase these behaviors in boys and have no detectable effects on children's academic performance, such as achievement test results or the chance of dropping out of high school.<sup>7</sup> It is possible that the benefits of moving away from very disadvantaged neighborhoods may become greater over time, or that the benefits may be more pronounced among children who were very young when they moved.<sup>8</sup> But there is as yet no strong evidence that moving poor families to less disadvantaged areas will substantially change children's life chances.<sup>9</sup>

### **Families**

If moving children to better neighborhoods is unlikely to improve their lives significantly, it is reasonable to contemplate making changes in the families in which children are raised.

Historically, recognizing that serious material deprivation could hurt children's life chances, antipoverty policy focused on changing the family environment by providing income transfers to poor families.<sup>10</sup> But as the number of single mothers increased and welfare rolls began to grow, policymakers turned their attention to trying to discourage out-of-wedlock childbearing and to encourage mothers to work outside the home. The welfare reform legislation signed by President Bill Clinton in 1996 explicitly bases the need for attention to these two issues on their presumed effect on children's life chances.<sup>11</sup> As Douglas Besharov notes, for most Americans welfare reform "was about reducing the deep-seated social and personal dysfunction associated with long-term dependency, *thereby ultimately reducing poverty*. For welfare reform to be a success on this measure will depend on whether the low-paying jobs taken by many women leaving welfare lead to better jobs, whether the household arrangements (and other sources of support) that have allowed mothers to leave welfare without working prove supportive and nurturing, and whether the eventual result is less dysfunctional behavior among parents and better outcomes for children."<sup>12</sup>

More recently many commentators aiming to change the "culture of poverty" have added another goal: religious adherence. Senator Rick Santorum, chairman of the Senate Republican Conference, has said apropos of faith-based social welfare programs, "The whole idea of funding people of faith is not just to provide good human services. It's also to provide good human services with that additional touch, if you will, with that aspect of healing that comes through that spiritual interaction. . . . You can't ignore the importance of the spiritual part of someone's life and say you're going to solve their problems. You're

throwing good money after bad."<sup>13</sup> The importance of religion in addressing poverty, like the promotion of work and marriage, inspires bipartisan agreement. In discussing faith-based social welfare programs several years ago, then-Vice President Al Gore argued that their "religious character . . . is so often key to their effectiveness," although he noted that the government's job would not be to promote "a particular religious view."<sup>14</sup> Commentator William Raspberry notes, "Many of the problems that are most difficult to get at in our society today have to do with changing attitudes. . . . There are people who do these things and some of the most successful ones are those who go to changing the person from the inside. Religious organizations may be better equipped than most organizations to do that kind of thing."<sup>15</sup>

Public debates on antipoverty policy devote more attention to changing parental culture than to approaches that would change specific parenting practices.<sup>16</sup> Such debates also give relatively little attention to another family-oriented strategy that is beyond our focus: replacing rather than changing the child's home environment, for example, by sending the child to preschool and before- and after-school programs.<sup>17</sup> As David Brooks notes, recently conservatives "have had free rein to offer their own recipe for social renewal: churches that restrain male selfishness, decency standards that check hedonism, social norms that discourage childbearing outside of wedlock. . . . Daniel Patrick Moynihan observed that the core conservative truth is that culture matters most [for poverty], and that the core liberal truth is that government can reshape culture."<sup>18</sup>

In the next section we discuss in more detail the ways in which parental work, marriage, and religion—the most common indicators of

"culture"—may affect children's educational attainment and future income, and we review what researchers have found about the likelihood that changing each of these indicators will reduce poverty in the next generation. Consistent with the beliefs of many policymakers, some research has documented large correlations between whether children lived in a two-parent family—or lived with at least one parent who worked—and their schooling and adult income. The simple correlation between parents' religious participation and children's schooling and income is less strong and less consistent. There is, however, little evidence to date that any of these relationships are causal—that, for example, living in a two-parent family in and of itself raises a child's educational attainment. We then consider what would happen to poverty in the children's generation if one could substantially change these indicators of culture among today's parents. Finally we discuss the implications for public policy.

### **The Effects of Parental Work, Marriage, and Religious Adherence on Children**

Research on the relationship between parents' religious adherence, family structure, and employment and their children's schooling and future income is hampered by three problems that make definitive conclusions impossible.

First, little research directly examines the relationship between these parental characteristics and the *adult income* of children. Policymakers often generalize from links between these parental characteristics and young children's outcomes to the links between these characteristics and children's schooling or income as adults, even though the relationships between young children's outcomes and adult schooling or income are

generally modest. Second, little research exists about the *causal* rather than the correlational links between these parental characteristics and children's adult outcomes, and studies that do try to assess causality produce conflicting results. Third, in policy debates and in some research, religion, family structure, and employment are treated as though they were dichotomous—religious or not,

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married or not, working or not. But each is much more complicated. For example, among the many alternatives to the two-married-parent household are a household headed by a single female, a household with a stepfather, or a long-term cohabiting relationship. Policymakers and researchers must identify carefully the terms of their comparisons in their claims about what is good for children.

### **Do Religious Parents Increase Children's Schooling and Adult Income?**

Policymakers who encourage religion or religiosity among parents as a way to help children avoid poverty in adulthood believe that the moral content of religion leads both children and parents to behave in ways that pro-

mote children's future economic well-being. According to this view, religious belief provides a moral compass that leads children away from teenage childbearing, delinquency, drug and alcohol use, and other behaviors that can lead to a life of poverty. At the same time religion instills a work ethic, honesty, and other characteristics valued by employers, making it more likely that when children grow up they will get and keep a job.

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*Low-income Americans are already more likely than high-income Americans to identify with a religious denomination, attend church, and pray often.*

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Religious parents will stay married and avoid behaviors that lead to the kinds of family dysfunction that hurt children's life chances. Thus, parents' religion can enhance children's future economic well-being by encouraging parents to behave in ways that benefit the children and by passing on religious attitudes to the children.

Ideally, to assess the relationship between parents' religion and children's adult income or educational attainment one needs a meaningful measure of parents' religion and a long-term data set that allows one to link a child's religious environment with his or her adult outcomes. One must also be able to control all the factors that are correlated with parental religion that might also affect children's eventual income and schooling. For example, parents who are more motivated and able to attend religious services may also be more likely

to participate in school events or other activities that enhance their children's outcomes. No research achieves this standard.

An even more basic issue with which research in this area must grapple is determining what aspect of parents' religion—affiliation, denomination, or intensity—might have the greatest effect on their children's outcomes. As yet there is no agreement on this point. Thus it is not always clear exactly what policymakers mean when they talk about religion as a way to end poverty. But clarity on this point is important, because trends in religious belief, denominational membership, and intensity of religious observance are not the same, and they may have quite different effects on children.<sup>19</sup>

Right now, the main policy mechanism for encouraging religion or religiosity seems to be public funding for religious organizations to provide social services. Religious groups have always played an important role in aiding the poor in the United States, although that support has historically been mostly separate from government aid. The federal government's direct support of religious social services started with the "charitable choice" measures signed into law by President Clinton between 1996 and 2000 to keep religious organizations from being excluded from competition for federal funds simply because they are religious.<sup>20</sup> President George W. Bush's "faith-based initiative" aims to expand the ability of faith-based organizations to compete for federal funding. One effect of these policy changes is to reduce the "cost" to individuals of religious participation: it requires less effort for people to receive religious messages when they are already at the local church, mosque, or synagogue for job training, drug abuse treatment, or other services. Although policymakers say that they uphold

the value of religious choice, and hence that they do not mean to influence the denomination that individuals choose, denomination is still an important aspect of religion and it may be inadvertently influenced if the government funds religious social services.

Low-income Americans are already more likely than high-income Americans to identify with a religious denomination, attend church, and pray often. In the General Social Survey, respondents whose income is below the mean for all Americans are more likely to identify with a religion than respondents whose income is above the mean; in fact, 91.2 percent of respondents whose family income is below the mean claim a religious affiliation. Respondents whose income is below the mean attend religious services at about the same rate as those whose income is above the mean.<sup>21</sup> African Americans are more likely to identify with a religion and to have greater religious intensity than whites. Yet African Americans have incomes that average only about half the incomes of whites.<sup>22</sup> These descriptive statistics raise questions about the extent to which "finding religion" would reduce poverty in the next generation, although they are of course far from conclusive evidence about the causal effects of religion on poverty.

Two studies estimate the relationship between parents' religious denomination and children's adult income. One, by Nigel Tomes, finds that parental religious denomination has no effect on children's income as adults once parental education is accounted for.<sup>23</sup> The other, by Todd Steen, finds that net of their own education and labor market experience, adult sons raised in Jewish and Catholic homes earn more than children raised in Protestant homes, and that adult children raised in families with no religious

affiliation earn about the same as those raised in Protestant homes.<sup>24</sup>

Several studies consider the relationship between an adult's religious affiliation and his or her own income. The incomes of adults who identify with any religion are no higher than those of adults who identify with none.<sup>25</sup> This conclusion, which holds even after taking into account the effects of family background, is consistent with the simple descriptive statistics already noted. But Jews have higher incomes and more schooling than members of other denominations, while members of theologically conservative Christian denominations (fundamentalist, Pentecostal, or sectarian religions) have lower incomes and less schooling.<sup>26</sup> One study finds that whether boys attended religious services at least twice a month had a small and statistically insignificant association with their eventual earnings.<sup>27</sup>

The religiosity of adults also appears to be linked with their own income and schooling, at least in some studies. Bruce Sacerdote and Edward Glaeser find that people with more schooling attend church more often than those with less schooling: 50 percent of college graduates, but only 36 percent of high school dropouts, attend church "several times a year."<sup>28</sup> But members of the most highly educated denominations attend church least often, and members of the least educated denominations attend most often. Sacerdote and Glaeser explain this puzzle by noting that education reduces the intensity of religious belief, so that people sort into less fundamental religions as they get more schooling. This observation does not tell us whether children raised in families that adhere to fundamental religions get less schooling, but it does suggest, consistent with Tomes's findings regarding religious mobility, that as such children

get more schooling they are likely to switch to less fundamental denominations.<sup>29</sup> If adults sort across denominations based on their schooling, the correlation between adults' education and their religious affiliation cannot be used to infer the relationship between parental religion and children's education.

The research discussed so far is unable to project what would happen to children's

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*It may be trust and other aspects of community, not religion, that lead to greater integration and better outcomes for adults and children.*

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eventual income if some outside force caused their parents to become more religious, because it is unable to isolate the causal influence of religion. Many factors that cause parents to be religious—motivation, sociability, good physical and mental health, access to good public or their own private transportation—can also affect their own income and their children's future income.

Jonathan Gruber tries to assess the causal influence of religion by looking not at the effect of a family's own religion but instead at the effect of living in geographic areas where religion is concentrated.<sup>30</sup> Gruber uses ancestry in an area as a predictor of religious density. Thus an Italian living in an area with many Poles lives with a greater density of Catholics than an Italian living in an area with many Swedes. Gruber finds that adults are much more likely to participate in religious activi-

ties when they live in areas where a larger fraction of people share their religion. People who live in such areas are also more likely to graduate from college and to have higher incomes. As Gruber acknowledges, the fact that greater religious density appears to lead to better outcomes among adults does not mean that the individual's religion or religious intensity leads to the better outcomes. Characteristics of more homogeneous communities or the social benefits provided by religious institutions may lead to these better outcomes. For example, people trust people who are like themselves more than they trust people different from themselves. It may be trust and other aspects of community, not religion, that lead to greater integration and better outcomes for adults and children. Gruber's work suggests that a highly religiously segregated society would produce better outcomes than a society that is equally religious but less segregated. But religious segregation might be costly in other ways, especially because religion is correlated with race and income. Gruber also finds evidence that high religious density leads to more intense religious beliefs, an effect that recent history suggests may not be unambiguously beneficial.

In sum, because people can choose whether to follow a religion, what religion to follow, and how enthusiastically to follow it, religion may be both a cause and an effect of many individual and family characteristics that affect children's lives. It is hard to separate the effects of factors that cause not only parents' religious affiliation and intensity but also their children's outcomes from the effect of religion itself. Almost no research does a good job of this. Moreover most children are already raised in families that identify with some religion, poor families are no less likely than rich families to identify with a religion,

and children who are raised in families with no religious affiliation are likely to grow up to identify with some religion.<sup>31</sup>

### **Do Married Parents Improve Children's Schooling and Adult Income?**

Growing up with married parents has long been correlated with a litany of positive child outcomes—a fact often cited by supporters of policies that promote marriage.<sup>32</sup> Many recent studies take into account the effects of family background to try to establish more closely the causal relationship between parents' marital status and children's outcomes. That analytical approach sometimes diminishes the link between parents' marital status and children's outcomes—a finding often cited by observers skeptical of policies that promote marriage.

Little research estimates the relationship between parents' marital status and their children's adult income. Moreover, researchers have no reliable way to estimate causal models of the effect of parents' marital status, and they have not been consistent in defining and measuring marital status. As a result there is little good empirical basis for estimating the likely outcome of policies that encourage marriage.

The one study that does estimate the relationship between parents' marital status and adult poverty of their children finds that having unmarried parents during childhood has no statistically significant effect on the probability of being poor at age twenty-four, regardless of whether the parents were divorced, separated, or never married.<sup>33</sup> The model attempts to isolate the effect of marital status by taking into account effects caused by parents' education, religion, and national origin. But such models do not necessarily provide better estimates about the causal ef-

fects of parents' marital status than simple correlations do, because they can still leave out many factors that are related to both parents' marital status and children's outcomes, thus biasing the estimates either up or down.<sup>34</sup> In addition, these models often take into account the effects of factors that are arguably caused by the parents' marital status. Family income is a case in point; but income often declines when families break up. If low family income is a result of parents' marital status, its effect should not be excluded in estimating the overall effect of parents' marital status on children. Doing so probably biases the effect of single parenthood downward.

When Charles Manski and several colleagues estimated the effect of family structure during childhood on high school graduation, using a variety of methods to take into account the way adults self-select into different types of family arrangements, they found that the estimates depended on how they took into account this self-selection.<sup>35</sup> Some researchers have used parental death as a quasi-experiment to examine whether parental absence hurts children's outcomes. Parental death is assumed to be random or at least less correlated than divorce with unobserved parental characteristics. These studies typically find that a parent's death has effects that are modest or nonexistent, and certainly much smaller than those that have been estimated from parental divorce.<sup>36</sup>

There are many types of family structures, and families can transition from one to another. Thus to argue that one type of family structure is beneficial to children requires clearly specifying the alternative family structure that one has in mind. Most people seem to agree that living with married biological parents is ideal for children. Research supports the claim that children raised by only

one biological parent fare worse than children raised by both biological parents in many areas, including their schooling and mental health.<sup>37</sup> Anne Case, I-Fen Lin, and Sara McLanahan find that in a sample of children living in married-couple families, step-, adopted, and foster children averaged one year less of schooling than the biological children of the same mothers.<sup>38</sup>

On the other hand, many policymakers seem to believe that living with a never-married single mother is the worst family structure for children. But several studies suggest that being raised by a step-parent may be worse for children's educational attainment than being raised by a single mother, regardless of whether the mother has never married or is divorced.<sup>39</sup> Although these studies take into account the effects of several important characteristics of parents and children, such as parent education or race and ethnicity, none tries to take into account the possibility of unobserved characteristics that may confound the link between family structure and child outcomes.

From the research on family structure, we draw two conclusions. First, on average children who grow up with two married biological parents get more schooling and earn higher wages than children who grow up in any other family type. And second, children raised in families with a step-parent get no more schooling and may get less schooling than those raised by their single biological mother. But the degree to which these patterns reflect the causal impacts of the family structure on children's life chances is not well understood.

### **Do Working Parents Improve Children's Schooling and Adult Income?**

The intent of the welfare reforms of the 1990s was to get single mothers into the labor

market to increase family income, reduce reliance on welfare, and provide a role model for children's eventual work habits. Some people also argued that work would be a disciplining and integrating experience, making these mothers happier and more self-confident and thus also benefiting their children. Others thought that for the most disadvantaged children, outside child care would provide a better environment for social and cognitive development than their own home. At the same time, many supporters of welfare reform and work requirements argue as a general principle that maternal work outside the home will impair the social and cognitive development of at least young children. Thus many policymakers hold that young children should live in a home with married parents, one of whom works (the father) and one of whom stays home with the children (the mother)—the idealized traditional family of the past. But when that ideal cannot be met, the custodial parent should work both because it is better for children to have one working parent—because work and self-sufficiency are morally desirable—and because it lowers the cost to governments that might otherwise have to support the family.

According to this reasoning, children in married-couple families will be worse off if their mothers work than if they do not, and children in single-mother families will be better off if their mothers work than if they do not. And children of working single mothers will do worse than children of married mothers who do not work. It is not clear whether children of working single mothers would do better or worse than children of married mothers who work.<sup>40</sup> We could find no study that estimates the effects of maternal work on children's schooling or eventual income. In fact, we could find no research that estimates the effect of parental or maternal employ-

ment on children’s income as adults. Most of the research estimates how maternal employment affects young children’s cognitive skills.<sup>41</sup> Although the results are mixed, the most recent and usually the best of these studies find that maternal employment during a child’s first year slightly impairs the child’s cognitive skills.<sup>42</sup> The findings for maternal work during the child’s second and third years are less conclusive.<sup>43</sup>

The evidence on the relationship between maternal employment and young children’s cognitive test scores is not strong, and there is little consensus about whether effects found for preschoolers are maintained as children get older.<sup>44</sup> Nonetheless, one can use this evidence to do a back-of-the-envelope calculation of the potential importance of maternal employment for wages in the next generation to demonstrate how a relationship found for young children translates into an adult outcome. If we assume that the higher-end estimates of the effect of maternal employment on a child’s cognitive skills during his or her first year of life are correct, that these effects are causal, and that they are maintained into the child’s adulthood, we can calculate that mothers’ employment in the child’s first year of life, through its effect on cognitive skill, would decrease future wages for white children by about 4 percent and leave unchanged the wages of black and Hispanic children.<sup>45</sup> Thus maternal employment is not likely to have any noticeable effect on poverty in the next generation through its effect on cognitive test scores.

One study that assesses the relationship between parental and children’s work ethic finds that parents and children work similar numbers of hours and that the similarity is only partially accounted for by similar labor market conditions.<sup>46</sup> Parents pass on prefer-

ences for work hours through their modeling of work behavior or through other factors. This research is at least consistent with the idea that children model their work habits on their parents’ work habits.

Two public policy changes during the 1990s provide a useful “natural experiment” for examining the effects of an externally imposed

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increase in employment among single mothers. The first, the 1996 welfare reforms, implemented work requirements for welfare recipients. In principle, the experimental evaluations of these work requirements—that is, the evaluations that sort study participants by random assignment and thus are the gold standard of research—should provide the most direct evidence about how policies that encourage (or require) work affect disadvantaged children. The second change, the increasing generosity of the federal earned income tax credit, also encouraged many single mothers to increase their work effort.<sup>47</sup>

Research documenting how these policies affect the work activity of single mothers is extensive.<sup>48</sup> Far less research, however, documents how changes in the mother’s work activity change child outcomes. The most recent and most comprehensive synthesis, by

Jeffery Grogger and Lynn Karoly, examines sixty-seven studies based on either random-assignment experiments or econometric techniques intended to control for unobserved characteristics that might confound the link between work activity and child outcomes—in other words, techniques intended to approximate the rigor of the random-assignment experiments. For our purposes, the two outcomes of most interest are academic achievement and behavior problems in adolescents.<sup>49</sup> Grogger and Karoly’s synthesis suggests that welfare reforms that increased mother’s work effort either increased the behavior problems of adolescents and reduced their academic achievement or had mixed effects, depending on the specific policy. (These same reforms sometimes had opposite effects on younger children’s outcomes.) This evidence should be interpreted cautiously both because the number of studies examined was modest and because all evaluated relatively short-term effects before welfare time limits were implemented. (These limits restrict the total amount of time women can spend on welfare, and so may increasingly push a different, and particularly disadvantaged, population of low-income women into the labor market.) Nonetheless this research suggests that policies that encourage poor single mothers to work probably do not improve the behavior or school achievement of their adolescent children.

Overall we can draw three conclusions about the relationship between maternal work and children’s achievements. First, the evidence does not yet allow us to assess whether mothers’ employment has different effects on children’s schooling or future income depending on whether the mothers are married or single parents. Second, most evidence about how maternal employment affects children’s outcomes suffers from methodological problems

serious enough to limit its usefulness for policy purposes. And third, studies that evaluate programs to encourage work among low-skilled single mothers suggest that increasing their employment is not unambiguously beneficial for their children’s schooling or behavior.

### **The Poverty-Prevention Paradox**

Even if parents’ culture as indicated by marriage, work, and religion had a causal effect on children’s schooling and adult income—which is uncertain—encouraging parents to marry, work, and become religious would do far less to reduce poverty among future generations of American adults than most policy-makers believe. The reason for this conclusion is that children who grow up with parents who are married, working, and religious also face some risk of experiencing poverty as adults. Therefore even successful efforts to change parental behavior or culture among “high-risk” families will have surprisingly modest effects on poverty in the next generation. We term this the poverty-prevention paradox.

To illustrate the paradox, we estimate the expected poverty rates in adulthood of children who grow up with their biological fathers and those who grow up apart from them. We use data from the U.S. Department of Education’s National Education Longitudinal Study (NELS) of 1988, which interviewed a nationally representative sample of eighth graders in 1988 and then again in 2000, when participants would have been around twenty-five years old.

According to these data, eighth graders who were living apart from their biological fathers had an expected poverty rate of 16.6 percent when they were twenty-five. In contrast, the poverty rate for eighth graders who were living with their fathers was 9.9 percent. The

powerful association between growing up without one’s father and being poor as an adult has led many people to conclude that addressing “culture” is the key to reducing poverty in America.

However, the contribution of fathers’ absence to overall poverty in the next generation depends not only on the difference in the poverty rates but also on the relative size of these two groups of children. According to the NELS, in 1988, 28 percent of eighth graders were living apart from their biological fathers and 72 percent were living with their fathers. To determine the contribution of each group of children to the overall poverty population in the next generation, we multiply the proportion of children in each family type by the poverty rate for each group by the total number of children in the population. For example, consider a population of 10,000 children (2,800 of whom are raised apart from their biological father and 7,200 of whom are raised with their father). Using the numbers from the NELS data, we see that about 465 children from father-absent families would be poor at age twenty-five ( $0.28 \times 0.166 \times 10,000$ ) as compared with 713 children from father-present families ( $0.72 \times 0.099 \times 10,000$ ). Note that despite their higher poverty rate, children from father-absent families would account for only 39.5 percent of poor adults (465 divided by 1,178).

Next, we calculate what the size of the poverty population would be if all eighth graders had lived with two biological parents in 1990. Using the same formulas as above and assuming that the poverty rate for all children was the same as the poverty rate of those living with both biological parents, we find that about 990 adults would be poor in the next generation ( $10,000 \times 0.099$ ), a reduction of 188 poor people. Despite the powerful link

between family structure and children’s chances of being poor as an adult, ensuring that every single eighth grader in the United States lived with his or her biological father would eliminate only around 16 percent (188 divided by 1,178) of poverty in the children’s generation—even assuming that the effect of living with one’s father is entirely causal, which it almost certainly is not.

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This perhaps surprising conclusion holds for our other measures of parent culture as well. For example, similar calculations using NELS data show that ensuring that all eighth graders lived in a household with at least one working adult would lower poverty in the children’s generation by 7 percent. Ensuring that all eighth graders participated in religious services would cut poverty in their generation by 9 percent. If eighth graders lived with their biological parents, at least one parent worked, and the child attended religious services, poverty in their generation would fall by 22 percent, assuming that the effects of these indicators of culture on children’s poverty status are entirely causal.

One potential limitation of these estimates is that the indicators of culture are measured only in the eighth grade. But even when we use data from the Panel Study of Income Dy-

namics (which follows children for a longer period than the NELS) to measure these family environments over several years rather than just at a single point in time, poverty in the children's generation does not decline much. It is possible to generate calculations indicating that changing "culture" would cut future poverty dramatically. If no child ever spent time in a household that did not have two married adults, at least one of whom was working, and that did not attend weekly religious services—and if these factors all had a causal effect on the child's chance of being poor—poverty in the children's generation would fall by as much as three-quarters. But setting such a high bar for the "pro-social" ideal would mean that the large majority of American households would not meet this standard and would assume that government interventions were capable of completely eliminating, without exception, such features of modern American life as divorce, job changes, and the choice not to attend religious services each and every week.<sup>50</sup>

### Policy Implications

Many policymakers believe that they could largely eliminate poverty in America if only they could increase parental attachment to mainstream institutions such as work, marriage, and religion. They assume that something about parental engagement with these institutions is associated with the capacity of families to instill in children the cognitive and noncognitive skills crucial for long-term economic success. Changing parental behavior in this way serves as an omnibus strategy for changing all the other parenting practices that matter for children.

Yet policymakers' faith that the key to reducing poverty is to encourage marriage, work, and religion among poor parents rests on a

shaky empirical foundation. Little good evidence supports the idea that these parental behaviors have strong causal effects on children's long-term economic success. Most studies on this topic focus on short-term effects on children, such as schooling, rather than on adult earnings or employment, and few studies convincingly solve the self-selection problem that plagues all research in this area. Parents who choose to get married (or work or go to church frequently) are likely to be systematically different from parents who choose not to do these things, in ways that are difficult for social scientists to observe with available data sets. As a consequence, convincingly separating out the ways in which parental marriage, work, or religion affect children from the ways in which a parent's propensity to be connected with these mainstream institutions does so is quite difficult.

Equally important is our observation that most adults who experience some economic poverty were brought up in the sort of "Ozzie-and-Harriet" households that many policymakers wish to make universal. The risk of adult poverty is indeed much lower among adults brought up in such households, but these "pro-social" households are so numerous that they wind up accounting for most poor adults. Targeting interventions to the highest-risk children is, in our view, a worthwhile goal in its own right, but policymakers should recognize the limits of this strategy for reducing poverty among future generations—the poverty-prevention paradox.

We are not arguing that a focus on high-risk behavior will never make a large dent in the overall scale of a social problem. The size of the dent that it will make will depend on how widespread the behavior is and on the strength of its association with the problem.<sup>51</sup> If in the future there is a substantial increase

in the share of households that never attend religious services or that lack two parents or that lack at least one worker, then targeting parent culture could become more important for ending poverty in America than our estimates suggest. Although the share of births to unmarried women has been increasing over the long term, this trend has flattened out over the past ten years.<sup>52</sup> Recent years have also seen substantial increases in labor force participation rates among single or never-married mothers, while rates for married mothers have changed little.<sup>53</sup> And although the share of Americans who attend religious services has been in steady decline, as in other industrialized countries, the United States still has one of the world's highest rates of religious attendance.<sup>54</sup> More important for present purposes, measures of religiosity are weakly correlated with poverty.

Nor are we arguing that interventions focused on parental employment, marriage, or religious participation are necessarily a bad idea. There might be many reasons for changing these behaviors apart from the chance that doing so will reduce poverty in the next generation. The argument we make

here is not about the social benefits of an Ozzie-and-Harriet approach in relation to the costs—which is the relevant comparison for decisions about whether to support specific policy interventions—but rather about its benefits in relation to the scale of the overall poverty problem. Many policymakers believe that changing parental work, marriage, or religiosity can end poverty in America. Based on the available evidence, that prospect does not seem likely.

Our final observation about the poverty-prevention paradox that arises with the Ozzie-and-Harriet approach is in some sense similar to the conclusion of Christopher Jencks and his colleagues regarding the role of economic poverty among children.<sup>55</sup> If ensuring that no child is raised in economic or moral poverty cannot eliminate poverty in the future, or even make a large dent in the problem, then what can? The answer that Jencks and colleagues offered thirty years ago seems as relevant today. To reduce poverty among future generations, there may be no substitute for a system of social insurance and income transfers for those children who end up poor as adults.

## Notes

1. Thanks to Philip Cook for this point.
2. Geoffrey Rose, "Sick Individuals and Sick Populations," *International Journal of Epidemiology* 14 (1985): 37.
3. For example, previous research suggests that a 1 standard deviation increase in cognitive test scores is associated with an increase in earnings of between 3 and 27 percent, with the best estimates in the 15 to 20 percent range; Christopher Winship and Sanders Korenman, "Economic Success and the Evolution of Schooling and Mental Ability," in *Earning and Learning: How School Matters*, edited by Susan E. Mayer and Paul E. Peterson (Brookings, 1999), pp. 49-78. Choosing the midpoint of the best estimates (18 percent), an intervention that increases children's cognitive test scores by 0.20 standard deviations, would increase adult earnings by  $0.20 \times 18 = 3.6$  percent. Child characteristics other than test scores, such as self-esteem, efficacy, and depression, have even weaker effects on future income than cognitive test scores; Greg J. Duncan and others, "School Readiness and Later Achievement," manuscript, Northwestern University (2004).
4. For good reviews of this literature, see Christopher Jencks and Susan Mayer, "The Social Consequences of Growing Up in a Poor Neighborhood," in *Inner-City Poverty in the United States*, edited by Laurence Lynn and Michael McGahey (Washington: National Academy Press, 1991), pp. 111-86; and Ingrid Gould Ellen and Margery Austin Turner, "Do Neighborhoods Matter and Why?" in *Choosing a Better Life*, edited by John Goering and Judith Feins (Brookings, 2003), pp. 313-38.
5. Gary Solon, Marianne E. Page, and Greg J. Duncan, "Correlations between Neighboring Children in their Subsequent Educational Attainment," *Review of Economics and Statistics* 82, no. 3 (2000): 383-92.
6. Alex Kotlowitz, *There Are No Children Here* (New York: Anchor Books, 1992); LeAlan Jones and Loyd Newman, *Our America: Life and Death on the South Side of Chicago* (New York: Washington Square Press, 1998).
7. Technically the estimates discussed in this paragraph describe the effects of offering families the chance to move to less distressed neighborhoods through MTO—known in the evaluation literature as the "intent-to-treat" effect (ITT)—since not all families assigned to one of the MTO treatment groups move under the program. But if assignment to one of the MTO treatment groups has no (or at least only modest) effects on families who do not actually move under MTO, then the ITT estimates will be proportional to the effects of MTO moves on those who do make such moves—that is, the "effects of treatment on the treated," or TOT—by the fraction of families assigned to the treatment group who move under MTO. For more details about these results and methods see Jeffrey R. Kling, Jeffrey B. Liebman, and Lawrence F. Katz, "Experimental Estimates of Neighborhood Effects," Working Paper 11577 (Cambridge, Mass.: National Bureau of Economic Research, 2005); or Jeffrey R. Kling, Jens Ludwig, and Lawrence F. Katz, "Neighborhood Effects on Crime for Female and Male Youth: Evidence from a Randomized Housing Voucher Experiment," *Quarterly Journal of Economics* 120, no. 1 (2005): 87-130; and Lisa Sanbonmatsu and others, "Neighborhoods and Academic Achievement: Results from the Moving to Opportunity Experiment," *Journal of Human Resources* (forthcoming).
8. These are speculations for which there is currently not much empirical evidence. On the other hand, data for MTO participants show that moving to a less disadvantaged neighborhood reduces arrests for violent crime among male youth in the first few years after randomization, an effect that dissipates by three to four

years after assignment and gives way to a positive treatment-control difference in property crime arrests; Kling, Ludwig, and Katz, "Neighborhood Effects" (see note 7). There is no detectable evidence for age heterogeneity in MTO effects on scores on achievement tests conducted four to seven years after randomization for children aged six to twenty at the time of the tests; Sanbonmatsu and others, "Neighborhoods and Academic Achievement" (see note 7). There is also not much evidence for age heterogeneity in MTO impacts on arrests among people who were fifteen to twenty-five in the period four to seven years after randomization; Kling, Ludwig, and Katz, "Neighborhood Effects" (see note 7); see also Bernard Harcourt and Jens Ludwig, "Broken Windows Policing: New Evidence from New York City and a 5-City Social Experiment," *University of Chicago Law Review* 73 (2006): 271–320.

9. Data from the Gautreaux program in Chicago, which moved African American families in public housing to other suburban or urban neighborhoods in the Chicago area, yield suggestive evidence that mobility might have more beneficial effects over a longer term than has been observed for MTO to date; see, for example, the summary in Leonard S. Rubinowitz and James E. Rosenbaum, *Crossing the Class and Color Lines: From Public Housing to White Suburbia* (University of Chicago Press, 2001). One difference between Gautreaux and MTO is that the former generates more racial integration than does the latter. However, strong conclusions about Gautreaux's effect on families are complicated by the fact that assignment of families to neighborhoods may not have been random, and the set of families who remained in lower poverty, more racially integrated suburban communities at the time outcomes were measured may not have been a representative sample of all families initially placed in these areas.
10. The effects of increased income transfers to poor families on the life chances of poor children remain unclear; see Susan Mayer, *What Money Can't Buy* (Harvard University Press, 1997). A more recent study finds that randomized welfare-to-work experiments that offer income supplements together with work requirements yield bigger gains in children's achievement scores than do work-only programs; Pamela Morris, Greg J. Duncan, and Christopher Rodrigues, "Does Money Really Matter? Estimating Impacts of Family Income on Children's Achievement with Data from Random-Assignment Experiments," Working Paper (New York: MDRC, 2004). These results are not necessarily inconsistent with those from Mayer, since the two studies consider different interventions (cash assistance versus cash assistance plus work requirements). Additional income with work may have beneficial effects by forcing (and enabling) low-income mothers to put their children into more structured child care settings, whereas extra cash in isolation may be devoted to things that improve family well-being but not necessarily child development. Unfortunately this hypothesis cannot be tested directly within the context of the welfare-to-work experiments examined by Morris and coauthors, since no experimental program changes income without changing labor supply (so experimental assignment cannot be used to instrument for an interaction of income with maternal employment). However, suggestive support for this interpretation comes from the fact that Morris and others find combined income and work effects only on children aged two to five and not on those already of school age (six to fifteen).
11. For example, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 begins as follows: "The Congress makes the following findings: (1) Marriage is the foundation of a successful society. (2) Marriage is an essential institution of a successful society which promotes the interests of children. (3) Promotion of responsible fatherhood and motherhood is integral to successful child rearing and the well-being of children."
12. Douglas J. Besharov, "Welfare Reform—Four Years Later," *Public Interest* (Summer 2002) (emphasis added).

13. Michael Sokolove, "The Believer," *New York Times Magazine*, May 22, 2005.
14. Quoted in Dennis R. Hoover, "Charitable Choice and the New Religious Center," *Religion in the News* (Greenberg Center for the Study of Religion in Public Life, Trinity College, Hartford, Conn.) 3, no. 1 (2000).
15. To be clear, Raspberry goes on to note, "The difficulty for me is at the intersection of these [religious] things with government funding," but his remarks quoted above speak to the larger view that religious belief per se has important implications for people's life chances. Pew Forum on Religion and Public Life, "With Ben Franklin's Blessing: A Primer on 'Faith-Based Initiatives,'" [www.pewforum.org/events/index.php?EventID=83](http://www.pewforum.org/events/index.php?EventID=83) (accessed January 25, 2006).
16. For a good review of this literature, see Jeanne Brooks-Gunn and Lisa Markman, "The Contribution of Parenting to Ethnic and Racial Gaps in School Readiness," *Future of Children* 15, no.1 (2005): 139–68.
17. For a good review of early childhood programs, see Katherine A. Magnuson and Jane Waldfogel, "Early Childhood Care and Education: Effects on Ethnic and Racial Gaps in School Readiness," *Future of Children* 15, no.1 (2005): 169–96. Evidence on early childhood programs' long-term effects during adulthood includes Eliana Garces, Duncan Thomas, and Janet Currie, "Longer-Term Effects of Head Start," *American Economic Review* 92, no. 4 (2002): 999–1012; Frances Campbell and others, "Early Childhood Education: Young Adult Outcomes from the Abecedarian Project," *Applied Developmental Science* 6, no. 1 (2002): 42–57; Jens Ludwig and Douglas Miller, "Does Head Start Improve Children's Life Chances? Evidence from a Regression Discontinuity Design," Working Paper 11702 (Cambridge, Mass.: National Bureau of Economic Research, 2005); and Lawrence J. Schweinhart and others, *Lifetime Effects: The High/Scope Perry Preschool Study through Age 40* (Ypsilanti, Mich.: High/Scope Press, 2005). On tutoring programs, most of what is known comes from a randomized experimental evaluation of perhaps the most famous such program, Big Brothers/Big Sisters; Joseph P. Tierney and Jean Baldwin Grossman, *Making a Difference: An Impact Study of Big Brothers/Big Sisters* (Philadelphia: Public / Private Ventures, 2000). While this study found encouraging differences in self-reported behavior between tutored and control youth, there remains some uncertainty about whether this evaluation captures tutoring effects on youths' willingness to engage in or self-report problem behaviors. Very little is known about the effects of such tutoring programs on the long-term adult economic outcomes of participants.
18. David Brooks, "Dollars and Sense," *New York Times*, January 26, 2006, p. A23.
19. For example, the share of Americans claiming that they do not believe in God increased from 1.5 percent in 1988 to 2.9 percent in 2000, but the proportion who have no doubt that God exists also increased, from 64 to 66.2 percent, and the share reporting that they had no religion or denominational preference has been largely unchanged for a decade; Michael Hout and Claude Fischer, "Why More Americans Have No Religious Preference: Politics and Generations," *American Sociological Review* 67, no. 2 (2002): 165–90.
20. [www.whitehouse.gov/government/fbci/guidance/charitable.html](http://www.whitehouse.gov/government/fbci/guidance/charitable.html).
21. Calculations from the General Social Survey, <http://sda.berkeley.edu/7507/quicktables>.
22. This review of the research on the relationship between religion and economic well-being relies heavily on Lawrence Iannaccone, "Introduction to the Economics of Religion," *Journal of Economic Literature* 36, no. 3 (1998): 1465–95, which cites an extensive literature. We do not repeat the citations from that article but add relevant and more recent research.

23. Nigel Tomes, "The Effects of Religion and Denomination on Earnings and the Returns to Human Capital," *Journal of Human Resources* 19, no. 4 (1984): 472–88.
24. Todd P. Steen, "Religion and Earnings: Evidence from the NLS Youth Cohort," *International Journal of Social Economics* 23, no. 1 (1996): 47–58.
25. Iannaccone, "Introduction to the Economics of Religion" (see note 22).
26. Ibid.; Alfred Darnell and Darren E. Sherkat, "The Impact of Protestant Fundamentalism on Educational Attainment," *American Sociological Review* 62, no. 2 (1997): 306–15.
27. Steen, "Religion and Earnings" (see note 24).
28. Bruce Sacerdote and Edward Glaeser, "Education and Religion," Working Paper 8080 (Cambridge, Mass.: National Bureau of Economic Research, 2001). A large body of research shows that social group membership increases with education and that religion is one of the most common forms of social membership. Greater education is not associated with private forms of religious expression, such as prayer and church attendance, but it is positively correlated with other forms of social membership. Thus any relationship between religion and economic outcomes is probably attributable to the fact that more social people are more likely to be religious and more social people are more likely to be successful, not to religion per se.
29. Tomes, using the General Social Survey, shows that about 60 percent of children raised in families with no religion claim to be members of a religion once they are adults, and about 10 percent of individuals who grew up in a family with a religion claim to have no religion once they are adults. This reduces our ability to conclude that the correlation between adults' religion and their income is a good proxy for the correlation between parents' religion and children's income. Tomes, "The Effects of Religion" (see note 23).
30. Jonathan Gruber, "Religious Market Structure, Religious Participation, and Outcomes: Is Religion Good for You?" Working Paper 11377 (Cambridge, Mass.: National Bureau of Economic Research, 2005).
31. As noted above, many policymakers believe that religious parents will set a better example for their children because they will be more likely to marry and remain married. Evidence suggests that individuals who report no religious affiliation have higher divorce rates than individuals reporting any affiliation; Linda Waite and Evelyn Lehrer, "The Benefits from Marriage and Religion in the United States: A Comparative Analysis," *Population and Development Review* 29, no. 2 (2003): 255–75. Today, which denomination adults adhere to has little relationship with marriage or divorce rates, although historically fewer Catholics and Jews divorced than Protestants. Waite and Lehrer also present evidence that children's own religious participation is associated with a lower probability of substance abuse and juvenile delinquency, less depression, and delayed sexual debut. However, the relatively small effect of religion on these outcomes is unlikely to translate into much of an effect on income in adulthood.
32. This brief review of the literature draws from a review by Donna Ginther and Robert Pollak, "Family Structure and Children's Educational Outcomes: Blended Families, Stylized Facts, and Descriptive Regressions," *Demography*, November 2004.
33. Eng Seng Loh, "Changes in Family Structure, Attained Schooling and Adult Poverty Status," *Social Science Quarterly* 77, no. 1 (1996): 145–58.
34. For example, an influential study by Wallerstein and various colleagues (Judith Wallerstein and Sandra Blakeslee, *Second Chances: Men, Women and Children a Decade after Divorce* (Boston: Houghton Mif-

flin, 1996), revised edition; Judith Wallerstein, Julia Lewis, and Sandra Blakeslee, *The Unexpected Legacy of Divorce: The 25 Year Landmark Study* (Hyperion, 2001) claimed that divorce was extremely detrimental to children, reducing their psychological well-being, their educational attainment, and their ability to form good relationships. This claim was based on a small sample of families in which the parents divorced and whom the authors followed over many years. They did not follow a control group of families in which the parents did not divorce, but they claimed that before the divorce their sample was representative of married-couple families. However, Andrew Cherlin notes that half the fathers and nearly as many of the mothers in this study suffered from a mental health problem for which they had been treated before the study began. These mental health problems probably contributed to both the divorce and the problems experienced by the children and controlling parents' mental health would have reduced the estimated effect of divorce. Of course there could have been other differences between the families in the sample and the average married-couple family that also could have contributed to both divorce and children's outcomes, and these too would have to be controlled to produce unbiased estimates of the effect of divorce. Andrew Cherlin, "Going to Extremes: Family Structure, Children's Well-Being and Social Science," *Demography* 36, no. 4 (1999): 421-28.

35. Charles Manski and others, "Alternative Estimates of the Effect of Family Structure during Adolescence on High School Graduation," *Journal of the American Statistical Association* 87, no. 417 (March 1992): 25-37.
36. Timothy Biblarz and Greg Gottainer, "Family Structure and Children's Success: A Comparison of Widowed and Divorced Single-Mother Families," *Journal of Marriage and Family* 62 (2000); Kevin Lang and Jay L. Zagorsky, "Does Growing Up with a Parent Absent Really Hurt?" *Journal of Human Resources* 36, no. 2 (2001): 253-73; Miles Corak, "Death and Divorce: The Long-Term Consequences of Parental Loss on Adolescents," *Journal of Labor Economics* 19, no. 3 (2001): 682-715.
37. P. R. Amato and B. Keith, "Parental Divorce and the Well-Being of Children: A Meta-Analysis," *Psychological Bulletin* (1991) 100: 26-46; Timothy J. Biblarz and Adrian E. Raftery, "Family Structure, Educational Attainment, and Socioeconomic Success: Rethinking the 'Pathology of Matriarchy,'" *American Journal of Sociology* 105, no. 2 (1999): 321-65; Sara McLanahan and Gary Sandefur, *Growing Up with a Single Parent: What Hurts, What Helps* (Harvard University Press, 1994); Andrew J. Cherlin, P. Lindsay Chase-Lansdale, and C. McRae, "Effects of Divorce and Mental Health through the Life Course," *American Sociological Review* 63 (1998), 239-49.
38. Anne Case, I-Fen Lin, and Sara McLanahan, "Educational Attainment of Siblings in Stepfamilies," *Evolution and Human Behavior* 22, no. 4 (2001): 269-89.
39. McLanahan and Sandefur, *Growing Up with a Single Parent* (see note 37); Biblarz and Raftery, "Family Structure" (see note 37); Roger Wojtkiewicz, "Simplicity and Complexity in the Effects of Parental Structure on High School Graduation," *Demography* 30, no. 4 (1993): 701-17; Scott Boggess, "Family Structure, Economic Status, and Educational Attainment," *Journal of Population Economics* 11, no. 2 (1998): 205-22.
40. Put another way, we would expect the interaction of indicator variables for married mother and employed mother to be negative, and the coefficient on married mother and employed mother to be positive. Estimates like these would, of course, require one to address all the problems associated with the meaning of "married" and "single" parents discussed above.
41. A few studies estimate the effect of maternal employment on children's educational outcomes during adolescence. One finds that among white children in married-couple families, "upper-class" and "middle-

class" boys got lower grades when their mothers worked, and their grades were lower still if the mother worked when the boy was of preschool age. The effects of maternal work were much less for girls and for children of lower social classes. See Karen Bogenschneider and Laurence Steinberg, "Maternal Employment and Adolescents' Academic Achievement: A Developmental Analysis," *Sociology of Education* 67, no.1 (1994): 60–77. Another finds no relationship between maternal employment and the school achievement of a small sample of eighth-grade children who lived with two (not necessarily biological) parents; see Sharon Paulson, "Maternal Employment and Adolescent Achievement Revisited: An Ecological Perspective," *Family Relations* 45, no. 2 (1996): 201–08. Controlling parents' marital status, another study finds that children whose mothers were not employed had higher math scores than children whose mothers were employed full time. Children whose mothers worked part time had higher math scores than children whose mothers were not employed or who were employed full time. See Chandra Muller, "Maternal Employment, Parental Involvement, and Mathematics Achievement among Adolescents," *Journal of Marriage and Family* 57 (1995): 85–100. These studies all control some family background characteristics, but none tries to control unobserved heterogeneity or to distinguish the effect of maternal employment for married and unmarried mothers.

42. Suzanne James-Burdumy, "The Effect of Maternal Labor Force Participation on Child Educational Attainment" (Mathematica Policy Research, December 1999); Wen-Jui Han, Jane Waldfogel, and Jeanne Brooks-Gunn, "The Effects of Early Maternal Employment on Later Cognitive and Behavioral Outcomes," *Journal of Family and Marriage* 63 (2001): 336–54; Jennifer Hill, Jane Waldfogel, and Jeanne Brooks-Gunn, "Assessing the Differential Impacts of High-Quality Child Care: A New Approach for Exploiting Post-Treatment Variables," *Journal of Policy Analysis and Management* 21, no. 4 (2002): 601–27; Jeanne Brooks-Gunn, Wen-Jui Han, and Jane Waldfogel, "Maternal Employment and Child Cognitive Outcomes in the First Three Years of Life: The NICHD Study of Early Child Care," *Child Development* 73, no. 4 (2002): 1052–72; Jane Waldfogel, Wen-Jui Han, and Jeanne Brooks-Gunn, "The Effects of Early Maternal Employment on Child Cognitive Development," *Demography* 39, no. 2 (2002): 369–92; Charles L. Baum, "Does Early Maternal Employment Harm Child Development? An Analysis of the Potential Benefits of Leave Taking," *Journal of Labor Economics* 21, no. 2 (2003): 409–48; Christopher J. Ruhm, "Parental Employment and Child Cognitive Development," *Journal of Human Resources* 39, no. 1 (2004): 155–92.
43. Some studies find that mother's work is associated with higher cognitive test scores; see Debrah Vandell and Janaki Ramanan, "Effects of Early and Recent Maternal Employment on Children from Low-Income Families," *Child Development* 63, no. 4 (1992): 938–49; Toby Parcel and Elizabeth G. Menaghan, "Early Parental Work, Family Social Capital, and Early Childhood Outcomes," *American Journal of Sociology* 99, no. 4 (1994): 972–1009; Kristin Moore and Anne K. Driscoll, "Low-Wage Maternal Employment and Outcomes for Children: A Study," *Future of Children* 7, no. 1 (1997): 122–27. Others find that it is associated with lower scores; see Arleen Leibowitz, "Parental Inputs and Children's Achievement," *Journal of Human Resources* 12, no. 2 (1977): 242–51; Frank Stafford, "Women's Work, Sibling Competition, and Children's School Performance," *American Economic Review* 77, no. 5 (1987): 972–80; Frank Mott, "Developmental Effects of Infant Care: The Mediating Role of Gender and Health," *Journal of Social Issues* 47, no. 2 (1991): 139–58; Jay Belsky and David Eggebeen, "Early and Extensive Maternal Employment and Young Children's Socioemotional Development," *Journal of Family and Marriage* 53 (1991): 1083–110. Some of the studies find that the estimates differ depending on the timing of work or the specific group or outcome analyzed; see Sonalde Desai, P. Lindsay Chase-Lansdale, and Robert T. Michael, "Mother or Market? Effects of Maternal Employment on the Intellectual Ability of 4-Year-Old Children," *Demography* 26, no. 4

- (1989): 545–61; Nazli Baydar and Jeanne Brooks-Gunn, “Effects of Maternal Employment and Child-Care Arrangements on Preschoolers’ Cognitive and Behavioral Outcomes: Evidence from the Children of the National Longitudinal Survey of Youth,” *Developmental Psychology* 27, no. 6 (1991): 932–45; Francine Blau and Adam J. Grossberg, “Maternal Labor Supply and Children’s Cognitive Development,” *Review of Economics and Statistics* 74, no. 3 (1992): 474–81; Parcel and Menaghan (cited above in this note); Theodore Greenstein, “Are the ‘Most Disadvantaged’ Children Truly Disadvantaged by Early Maternal Employment?” *Journal of Family Issues* 16, no. 2 (1995): 149–69; Peter Barglow and others, “Developmental Follow-up of 6–7 Year Old Children of Mothers Employed during Their Infancies,” *Child Development and Human Development* 29, no. 1 (1998): 3–20.
44. One study finds that the negative impact of first-year employment is temporary; see Elizabeth Harvey, “Short-Term and Long-Term Effects of Early Parental Employment on Children of the National Longitudinal Survey of Youth,” *Developmental Psychology* 35, no. 2 (1999): 445–59. Others suggest that some effects persist; see Han, Waldfogel, and Brooks-Gunn, “The Effects of Early Maternal Employment” (see note 42); and Waldfogel, Han, and Brooks-Gunn, “The Effects of Early Maternal Employment” (see note 42).
45. This calculation assumes that having a mother who works in the first year of a child’s life reduced cognitive test scores by about a quarter of a standard deviation (Waldfogel, Han, and Brooks-Gunn, “The Effects of Early Maternal Employment”) (see note 42) and that a 1 standard deviation decline in test scores is associated with a 16 percent increase in wages (Winship and Korenman, “Economic Success”) (see note 3).
46. Joseph Altonji and Thomas Dunn, “An Intergenerational Model of Wages, Hours and Earnings,” *Journal of Human Resources* 35, no. 2 (2000): 221–58.
47. Rebecca Blank, “Evaluating Welfare Reform in the United States,” *Journal of Economic Literature* 40 (2002): 1105–66; Bruce Meyer and Dan Rosenbaum, “Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers,” *Quarterly Journal of Economics* 116, no. 3 (2001): 1063–114.
48. See for example the review in Robert Moffitt, *Means-Tested Transfer Programs in the United States* (University of Chicago Press, 2003).
49. Jeffery Grogger and Lynn Karoly, *Welfare Reform: Effects of a Decade of Change* (Harvard University Press, forthcoming).
50. For details, see Jens Ludwig and Susan Mayer, “Ending Poverty by Changing ‘Culture’: The Poverty-Prevention Paradox,” Working Paper, Georgetown University (2006).
51. For example, Greg J. Duncan and Saul Hoffman, “Teenage Underclass Behavior and Subsequent Poverty: Have the Rules Changed?” in *The Urban Underclass*, edited by Christopher Jencks and Paul Peterson (Brookings, 1991), pp. 155–74. Note that encouraging women to complete high school and delay fertility until marriage can greatly reduce their own chances of living in poverty, particularly among African Americans.
52. [www.childtrendsdata.bank.org/indicators/75UnmarriedBirths.cfm](http://www.childtrendsdata.bank.org/indicators/75UnmarriedBirths.cfm) (accessed February 22, 2006).
53. Isabel Sawhill and others, “Results to Date,” in *Welfare Reform and Beyond: The Future of the Safety Net*, edited by Sawhill and others (Brookings, 2002), pp. 9–19.
54. [www.religioustolerance.org/us\\_rel1.htm](http://www.religioustolerance.org/us_rel1.htm) (accessed February 22, 2006).
55. Christopher Jencks and others, *Inequality: A Reassessment of the Effect of Family and Schooling in America* (New York: Basic Books, 1972).