APPENDIX A   The PSID Sample and Family Income

The **sample** for this analysis is 2,367 individuals who were between the ages of 0 and 18 in 1968 and have been tracked into adulthood through the Panel Study of Income Dynamics (PSID), an annual survey collecting information on family income and other characteristics. The PSID core sample includes an oversampling of low-income households (commonly referred to as the Survey of Economic Opportunity (SEO) sample) in addition to a regular cross-sectional national sample (the Survey Research Center (SRC) sample). Both components of the sample were included in the analysis, although two-thirds of the low-income sample observations were dropped from the sample in 1997 as a cost-savings measure and thus were excluded from the analysis.

The **unit of analysis** is the individual child. Individual **survey weights** were used to adjust for the likelihood of sample selection (given the purposeful oversampling of low-income households and the subsequent sample reduction) and also to adjust for non-random attrition. Despite these adjustments, the sample may suffer from non-random attrition, that is, individuals who have dropped out of the sample may differ from those who remain in the sample. The sample does not include immigrants who entered the country since 1968, nor does the analysis focus on generations born before 1950 or after 1968.

Family cash income is the focus of the analysis, including taxable income (such as earnings, interest and dividends) and cash transfers (such as Social Security and welfare) of the head, spouse and other family members. The PSID definition of family, used in this analysis, includes single-person families and unmarried cohabiting couples who share resources, in addition to families related by blood, marriage or adoption. As discussed in Appendix B, family cash income does not include the value of non-cash compensation such as employer contributions to health insurance and retirement benefits, nor does it include the effect of taxes or non-cash benefits such as food stamps. All incomes are reported in 2006 dollars, using the CPI-U-RS to adjust for inflation.

Parental family income is based on total family income averaged over five years, 1967–1971, following family income for the head of the family in which the child resided in 1968. This income is referred to as the child's parents' income, although the sample includes children living with grandparents or other relatives and it includes income of all members of the family (head, spouse, and other family members). Average age of the children's parents was 40.9 at the time of survey interview (1968–1972). Five-year averages are used as a proxy for lifetime income.

Children's adult income is based on total family income (of the family in which the adult child resides), averaged over five years of income. Because the PSID shifted from annual to biennial data collection in the mid 1990s, the five years of data are collected over a seven-year interval (income in 1995, 1996, 1998, 2000, and 2002). Family income data are collected at ages 27–34 for the youngest children in the sample (those born in 1968) and ages 45–52 for the oldest children (those 18 in 1968). Average age of the children was 39.4 at the time of survey interview (1996–2003).

Negative and zero incomes are bottom-coded to $1, and individuals with missing data for two or more years in either five-year period were dropped. As noted above, this restriction resulted in dropping the portion of the SEO sample that was discontinued in 1997.

APPENDIX B   Non-Cash Contributions to Family Economic Well-Being

Economic mobility is measured in this series by tracking changes in families' cash income. While more comprehensive than earnings, family cash income does not account for fringe benefits, taxes, non-cash assistance and other factors affecting economic well-being. To what extent would mobility trends differ if these contributions were included?

- Absolute mobility would be higher with inclusion of the value of **fringe benefits** such as employer-provided health insurance, retirement benefits, vacation and sick leave. Employer contributions to retirement and health insurance were higher in the children's generation than the parents' generation, totaling 7 percent of wages and salaries in 1967–1971 and 13 percent in 1995–2002 according to aggregate national data.[1] The inclusion of these benefits would increase upward mobility the most for those at the top; jobs at the top of the income distribution are more likely to provide these health and retirement benefits. Workers in the bottom half of the distribution have suffered from substantial declines in health insurance and pension coverage since 1979.[2]

- Overall mobility is largely unchanged after an adjustment for federal **taxes,** but inequality is somewhat lessened. Taxes reduce disposable income, with the effect varying by family income. On average, federal taxes reduced average family income by 22.4 percent in the 1995–2002 time period, varying from 27.5 percent for the top fifth to 5.7 percent for families in the bottom fifth, according to the Congressional Budget Office (CBO). The effective federal tax rate has fluctuated somewhat over time, but was roughly the same in 1979, the earliest year in the CBO study as in 1995-2002 (22.2 compared to 22.4 percent). In other words, overall mobility is largely unchanged after adjustment for federal taxes, but inequality is somewhat lessened. Families at the bottom have experienced the largest reduction in tax rate, due to the expansion of the Earned Income Tax Credit.[3] State and local sales, property and income taxes take a further bite out of family income, with a tax burden that is more evenly distributed across the income distribution.[4]

- **Non-cash transfers,** such as food stamps and subsidized housing, increase disposable income for the poorest families. Federal spending on food and housing benefits increased dramatically during the five-year period in which parental income was measured (1967–1971) and has continued to grow since then. Spending per household on food and housing benefits grew by 53 percent between 1973 and 2003, a growth rate slightly higher than that for family incomes in the PSID sample.[5] In 2002, 5.6 percent of households received food stamp benefits averaging $1,784 over the year, 7.1 percent of households received a school lunch benefit averaging $695 and 4.6 percent of households received housing assistance averaging $2,390.[6]

- **Other adjustments** that are included in some measures of disposable income can be both positive (such as returns to home equity and capital gains) and negative (such as child care and other work expenses).

In sum, these additional measures add some refinement to the mobility picture. Comprehensive measures that include fringe benefits and non-cash government benefits suggests slightly higher growth rates than seen from cash income alone. In addition, post-tax, post-transfer measures suggest somewhat less inequality than depicted by pre-tax measures.

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[1] *Council of Economic Advisers, 2007, Table B-28, p. 262. If one adds in employer contributions to government insurance, the ratio of non-wage compensation to wage compensation rises from 11.6 percent in 1967–1971 to 20.7 percent in 1995–2002.*

[2] *See Katz and Autor, 1998, Section 2.3, "Total Compensation Inequality vs. Wage Inequality"; see also Pierce, 2001.*

[3] *Congressional Budget Office, 2006.*

[4] *McIntyre et al., 2003.*

[5] *Author's calculations based on expenditures from Congressional Research Service, 2006, Table 5 and population data from Census Bureau, 2007, Table 57.*

[6] *Census Bureau, 2004. Table 7. Income of Households from Specified Sources, by Poverty Status: 2002.*

However, the broader income measures show similar trends to cash income measures, namely, average family incomes have grown between the generations, with the most rapid income growth at the top fifth of the income distribution. For example, the CBO measure of after-tax, comprehensive household income shows a growth in annual income of 41 percent between 1979 and 2004, with a rate of 69 percent for the top fifth and 6 percent for the bottom fifth. Mean household income under CBO's disposable income measure was $62,900 in 2004, ranging from $14,700 for the bottom fifth to $155,200 for the top fifth.[7]

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[7] *Congressional Budget Office, 2006. Incomes are reported in 2004 dollars. The after-tax measure incorporates the effects of four major federal sources of revenue: individual income taxes, social insurance (payroll) taxes, corporate income taxes, and excise taxes. Comprehensive cash income is the sum of wages, salaries, self-employment income, rents, taxable and nontaxable interest, dividends, realized capital gains, cash transfer payments, and retirement benefits plus taxes paid by businesses (corporate income taxes and the employer's share of Social Security, Medicare, and federal unemployment insurance payroll taxes) and employee contributions to 401(k) retirement plans. Other sources of income include all in-kind benefits (Medicare, Medicaid, employer-paid health insurance premiums, food stamps, school lunches and breakfasts, housing assistance, and energy assistance).*

APPENDIX C   **Four-Part Typology of Economic Mobility of Sons and Daughters**

It is important to demonstrate how men and women move beyond their parents in both absolute and relative terms. As shown in the Chapter V "Economic Mobility of Men and Women," sons are slightly more likely than daughters to surpass the family incomes of their parents (69 percent compared to 64 percent), and there are fewer differences between men and women in relative movement up and down the income distribution. These two measures of mobility are integrated in a four-part mobility typology, presented in the table on the next page. It shows the following:

• **About one-third of both sons and daughters are** *upwardly mobile* in the sense of both getting ahead of their parents' family income and moving ahead of their parents' income ranking (36 percent of sons and 33 percent of daughters).

• **Another one-fourth of sons and daughters are** *riding the tide* and are making more than their parents but remain in the same economic position (27 percent of sons and 26 percent of daughters).

• **As with all children, there is a small percentage (5 to 6 percent) of both sons and daughters who are** *falling despite the tide;* although they have more income than their parents they fall behind their parents' economic position.

• **Daughters appear to be slightly more likely to be** *downwardly mobile* **than sons.** More than one-third (36 percent) of daughters make less than their parents' income and fall behind or remain at their parents' economic position, compared to 31 percent of sons.

Much of the observed differences between men and women are concentrated in the experiences of children in the bottom fifth. Almost two-thirds of men born to parents in the bottom fifth are upwardly mobile, while only half of women are.

**Children's Chances of Experiencing both Absolute and Relative Mobility,
by Parents' Family Income and Gender (Percent in Each Category)**

MEN	PARENTS' FAMILY INCOME RANK					
	BOTTOM QUINTILE	SECOND QUINTILE	MIDDLE QUINTILE	FOURTH QUINTILE	TOP QUINTILE	ALL CHILDREN
Upwardly Mobile Higher income and up 1 or more quintiles	65 %	55 %	35 %	27 %	N/A[1]	36%
Riding the Tide Higher income and same quintile	20	20	28	35	35	27
Falling Despite the Tide Higher income and down 1 quintile	N/A[2]	2	4	10	13	6
Downwardly Mobile Lower income and lower/same quintile [3]	15	23	34	29	52	31
Total	100	100	100	100	100	100

WOMEN	PARENTS' FAMILY INCOME RANK					
	BOTTOM QUINTILE	SECOND QUINTILE	MIDDLE QUINTILE	FOURTH QUINTILE	TOP QUINTILE	ALL CHILDREN
Upwardly Mobile Higher income and up 1 or more quintiles	53 %	49 %	37 %	25 %	N/A[1]	33 %
Riding the Tide Higher income and same quintile	27	21	19	30	33	26
Falling Despite the Tide Higher income and down 1 quintile	N/A[2]	1	10	8	6	5
Downwardly Mobile Lower income and lower/same quintile [3]	20	29	34	37	61	36
Total	100	100	100	100	100	100

Source: Brookings tabulations of PSID data.

Note: Totals may not add due to rounding.

[1] Those in the top quintile cannot meet this definition, because there is no quintile above the top quintile.

[2] Those in bottom quintile cannot meet this definition, because there is no quintile below the bottom quintile.

[3] Any observation with income exactly equal to parents is also classified as downwardly mobile. Source: PSID tabulations.

APPENDIX D   **Four-Part Typology: Economic Mobility of White and Black Families**

As a supplemental step in the analysis, the absolute and relative mobility measures presented in Chapter VI, "Economic Mobility of Black and White Families," were integrated in a combined view to describe more fully how black and white Americans experience economic mobility.

When the data are not controlled for income, there is not much difference in the mobility experiences of black and white Americans.[1]

- Overall, slightly more than one-third of both black and white children are *upwardly mobile* in the double sense of rising above their parents in dollar levels and moving up at least one income quintile, as shown in the table below.

- About one-fourth of both racial groups are *riding the tide,* that is, rising above parental income levels in inflation-adjusted dollars, but without moving up an income quintile.

- A small group of individuals (6 percent of white children and 2 percent of black children) are *falling despite the tide.* They get ahead of their parents' income in absolute terms but fall back one quintile.

- Finally, one-third or more are *downwardly mobile,* dropping below parents in both income level and income quintile.

However, within income groups, there are large differences, with white children more upwardly mobile than black children.

This contrast is illustrated by comparing children in the middle-income group. More than one-third of white children whose parents are in the middle quintile are upwardly mobile and one-third are downwardly mobile. Among black children from the middle quintile, however, only 17 percent are upwardly mobile and more than two-thirds (69 percent) are downwardly mobile. Similarly, white children in other income groups have higher rates of upward mobility than black children, while black children fall more heavily into the downwardly mobile category.[2]

How is it possible for blacks to be so similar to whites in the overall mobility findings when they lag behind whites in upward mobility within income groups? As noted when discussing mobility findings in the chapter, the positive mobility results for all black children are driven by the large number of children in the bottom fifth of the income distribution, where likelihood of exceeding low parental income is fairly high for both racial groups.

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[1] *There is no statistical significance between blacks and whites in the "overall" column, with the exception of the "falling despite the tide" category, where 2 percent of blacks is statistically different from 6 percent of whites.*

[2] *The differences between blacks and whites in both upward mobility and downward mobility are statistically significant for every quintile except the fourth, where, as noted, estimates are imprecise due to small sample size.*

**White and Black Children's Chances of Experiencing both Absolute and Relative Mobility,
by Parents' Family Income (Percent Children in Each Category)**

WHITES	PARENTS' FAMILY INCOME RANK					
	BOTTOM QUINTILE	SECOND QUINTILE	MIDDLE QUINTILE	FOURTH QUINTILE	TOP QUINTILE	ALL CHILDREN
Upwardly Mobile Higher income and up 1 or more quintiles	69 %	58 %	37 %	26 %	N/A[1]	34 %
Riding the Tide Higher income and same quintile	21	19	23	33	34	27
Falling Despite the Tide Higher income and down 1 quintile	N/A[2]	1	7	8	10	6
Downwardly Mobile Lower income and lower/same quintile [3]	10	22	32	33	56	33
Total	100	100	100	100	100	100

BLACKS	PARENTS' FAMILY INCOME RANK					
	BOTTOM QUINTILE	SECOND QUINTILE	MIDDLE QUINTILE	FOURTH QUINTILE	TOP QUINTILE	ALL CHILDREN
Upwardly Mobile Higher income and up 1 or more quintiles	46%	26 %	17%	11*%	**	37 %
Riding the Tide Higher income and same quintile	27	24	9	22*	**	24
Falling Despite the Tide Higher income and down 1 quintile	N/A[2]	2	5	16*	**	2
Downwardly Mobile Lower income and lower/same quintile [3]	27	48	69	51*	**	37
Total	100	100	100	100	100	100

Source: Brookings tabulations of PSID data.

Note: Totals may not add due to rounding.

* Interpret data with caution due to small sample size. ** Too few observations to report.

(1) Those in the top quintile cannot meet this definition of "upwardly mobile," because there is no quintile above the top quintile.

(2) Those in bottom quintile cannot meet this definition of "downwardly mobile," because there is no quintile below the bottom quintile.

(3) Any observation with income exactly equal to parents is also classified as downwardly mobile.

APPENDIX E   Research Literature on Black-White Differences in Intergenerational Income Mobility

How do the findings in this study on Black and White mobility compare to results of other researchers? And does multivariate research indicate whether the differences observed in simple cross-tabulations would remain if the analysis controlled not just for income, but also for a host of other parental characteristics? Preliminary responses to these questions are provided in the following brief review of the literature on black-white differences in intergenerational mobility.

Economist Tom Hertz (2005, 2006) finds similar relative mobility patterns to those displayed in Figure 6, in Chapter VI, "Economic Mobility of Black and White Families." In fact, his analyses, which include all individuals in the PSID who were born between 1942 and 1972, show even larger racial disparities, particularly with regard to black children being trapped in the bottom of the income distribution. From this pattern, he concludes that much of the overall intergenerational persistence of poverty in America is driven by the experience of black children. More generally, he argues that a key channel for the overall transmission of economic status from parents to children in the United States is the passing down of skin color and other characteristics that are correlated with race and that have social and economic consequences for their children.

Two new studies also report large differences in relative mobility between black and white families. Debopam Bhattacharya and Bhashkar Mazumder (2007) find that blacks are less likely than whites to transition out of the bottom of the income distribution, based on analysis of data from the National Longitudinal Survey of Youth. Dalton Conley (forthcoming) reports on upward as well as downward mobility by race, and, consistent with this study, finds substantial downward mobility among black families with high incomes.

Two studies of sibling correlations in earnings provide somewhat conflicting evidence about mobility differences by race. Anders Björklund and colleagues (2002) find that correlations in the United States drop from 0.43 to 0.32 (a drop of 0.11), when moving from the full PSID sample to a white-only sample, suggesting that race explains a sizable amount of the similarity of income between brothers in the United States. In a similar analysis of data from the National Longitudinal Surveys, David Levine and Bhashkar Mazumder (2007) find a somewhat smaller drop (of 0.04 to 0.07 depending on the time period), suggesting a smaller impact of race.

With regard to the possible factors contributing to black-white differences in income mobility, Hertz (2006) finds that the income gap between blacks and whites in the second generation is reduced, but only from 33 percent to 28 percent, when controlling for a vast array of parental attributes—not just parental income, but also parental education, family structure, annual hours worked by parents, homeownership, and parental attitudes and behaviors, among many others. After a number of different analyses, Hertz concludes that race itself is helping to determine economic outcomes for black children. He notes that he cannot distinguish whether this is a result of outright labor market discrimination, differences in quality of schooling, differential attitudes of children, or other unobserved factors. Bhattacharya and Mazumder (2007) find that cognitive skills of the second generation measured during adolescence explain much of the mobility gap between races, although they note their analysis does not explain the source of this difference in test scores. Drawing on the studies of Hertz and Björklund et al., Samuel Bowles and Herbert Gintis (2002) argue that race, along with wealth and schooling, is one of the three largest channels of intergenerational status transmission in the United States.

In a review of literature from the 1960s, 1970s and 1980s, Mary Corcoran (1995) also finds some evidence that low-income status is passed down from black parents to black children, with race-based differences in economic outcomes only somewhat reduced when controlling for various background characteristics. Dalton Conley (1999) argues that the wealth gap between black and white families explains much of the persistence of other inequalities that persist across generations. Not only do blacks have much fewer assets than whites, but intergenerational transmission of wealth from parents to children is the largest factor explaining why whites have higher levels of wealth than blacks.

This brief literature review is limited to the literature on intergenerational income mobility and race; the interested reader is also referred to the much larger literature on black-white differences in economic outcomes more generally.