The State of Working America
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Income

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CHAPTER 2

Income

Already a 'lost decade'

Income is at the core of living standards for American families and households. Income received from work, returns on investments, and/or government benefits is what enables families and households to secure food and shelter, cover unexpected costs (such as for hospital stays or roof repairs), withstand periods of joblessness, save for children's education, and ensure a comfortable retirement.

Three key issues arise when analyzing the trajectory of American incomes in recent decades: the large cost inflicted by the Great Recession on American incomes and the long shadow it is likely to cast on income growth in the next decade, the steep and broadly recognized rise in income inequality since the late 1970s, and the contested question of just how well those in the middle of the income distribution (i.e., the middle class) have fared in the face of this rising inequality, and what their change in circumstances tells us about how to assess American economic performance over that time.

While it is generally recognized that the Great Recession dealt a harsh blow to American family and household incomes, our analysis reveals that the business cycle preceding the recession was already shaping up as a lost decade for American incomes. Between the business cycle peaks of 2000 and 2007, most measures of typical American incomes registered either negligible gains or outright losses. Median household income, for example, fell by 6 percent over the entire period. Similarly, median income of working-age families never recovered its 2000 peak in the years leading up to the Great Recession.

This poor performance during an economic recovery and expansion was then followed by the severe setback to incomes during the Great Recession. Median income of working-age families, for example, fell 7.1 percent between 2007

and 2010 (from $68,893 to $63,967). Further, the strong relationship between income growth (or lack thereof) and unemployment implies that if full labor-market recovery from the Great Recession takes as long as forecasters predict, nearly two decades likely will pass before American incomes regain lost ground and return to their 2000 levels. This is an underappreciated economic calamity.

The steep rise in inequality in recent decades is familiar to many readers and has been the subject of many previous editions of *The State of Working America*. It is widely acknowledged that American families and households with the highest incomes (the top 1 percent, for example) have been claiming an increasingly large share of overall income. Further, the amount of additional income they have received is economically significant and greatly constrains how much income growth is left over for others to enjoy. Take one example: Between 1979 and 2007 (the last year before the Great Recession) the top 1 percent of households claimed more of the total income growth generated in the U.S. economy (38.3 percent) than that claimed by the bottom 90 percent of households (36.9 percent), even when including the value of government transfers (such as Social Security) and employer-provided benefits. In that same period, income of the top 1 percent of households grew 240.5 percent, compared with 10.8 percent for the bottom fifth of households and 19.2 percent for the middle fifth of households.

This rising inequality has been primarily driven by developments in market incomes, particularly the rapid concentration of income derived from labor (labor earnings, also referred to as "wages" in this book) and income derived from capital ownership (such as interest, dividends, and capital gains) in the hands of households at the top of the income scale. Trends in taxes and transfers (together, "nonmarket incomes") have generally failed to counter this concentration of market incomes, and have actually heightened inequality of market incomes by some measures. For example, the net effect of taxes and transfers boosted overall income of the bottom fifth of households by 37.2 percent in 1979 but just 28.3 percent in 2007.

In addition to the growing concentration within both labor- and capital-derived incomes, there has been a large increase in the share of overall income coming from owning capital and a decrease in the share coming from other sources, notably from work (labor income). This shift from labor-derived to capital-derived income in recent decades has contributed significantly to the growing share of income claimed by households at the top of the income distribution. From 1979 to 2007, the share of overall income claimed by the top 1 percent of households rose from 9.6 percent to 20.0 percent, or 10.4 percentage points, compared with the 7.0 percentage-point gain that would have occurred without the shift towards capital-based incomes. This means that for the top 1 percent of households, nearly one-third of their income share increase was driven by this shift toward capital-based income.

The last section of this chapter addresses the controversial question, "How well did middle-income households and families do in the decades leading up to the Great Recession?" Recent revisionist literature has downplayed the economic significance of rising inequality by claiming that households and families in the middle of the income distribution have managed significant income gains despite rising inequality, when the value of in-kind benefits (such as medical care) and government transfers is included in income measures. But these analyses consider any income growth above zero to be "significant." We argue for more analytic discipline, asserting that income gains for specific groups of households should be measured against benchmarks of performance for the overall economy. Further, we argue that the economic value of these medical benefits are overstated due to a technical flaw in how they are deflated; adjusting for the flaw greatly reduces the contribution they make to income growth for the middle fifth of households. Lastly, we argue that the sources of these income gains must be examined to determine whether the private economy is performing efficiently or fairly.

On the first issue—proper benchmarks—we note that while comprehensive incomes of households in the middle fifth of the income distribution grew 19.1 percent between 1979 and 2007, incomes in 2007 would have been 27 percent greater had they kept pace with the overall average income growth over the period (see Chapter 1). Of course, this overall average growth rate was buoyed by the extraordinarily fast income growth at the very top of the income distribution. But in a real sense, rising inequality can be described as a 27-percent tax on middle-income growth over these years—an implicit tax that dwarfs the impact of any real-world tax these households face. (For this calculation we used unrounded data provided by the Congressional Budget Office, which shows middle-fifth incomes grew 19.1 percent, rather than the 19.2 percent growth rate, from publicly available data, cited earlier.)

On the second issue—the value of medical benefits—we note that more-optimistic portrayals of middle-income growth over this period rely heavily on flawed assumptions about how to value the nominal payments made to families to cover the costs of health care. When these health care payments are properly deflated to reflect the very rapid health care cost inflation from 1979 to 2007, income growth of middle-income households is much reduced. Roughly one-third of the overall 19.1-percent income growth in these years is erased if we use a correct medical-care-specific price deflator for these benefits.

On the third issue—the sources of these income gains—we argue they do not indicate efficiency or fairness in the overall economy, particularly in boosting growth for middle-income households over these decades. Although incomes of middle-income households grew between 1979 and 2007, this growth was driven to a large degree by government transfer payments, primarily Social Security, Medicare, and Medicaid. The growth of these social insurance programs is a clear

policy victory in that they are doing what they are designed to be doing: boosting growth and economic security for American households. However, there is little reason to take the growth of these programs as evidence that the private economy is being managed well or fairly for middle-income households.

Further, to the degree that market-based incomes (which, for the middle fifth of households, overwhelmingly come from wages) have contributed to rising total incomes in recent decades, it is not due to increasing hourly wages (a claim documented more fully in Chapter 4). Rather, much of the rise in annual wages for middle-fifth households has been driven by increased hours of work. Working-age households in the middle fifth increased average annual hours worked by 327 between 1979 and 2007. Married couples with children in the middle of the income distribution increased their average annual hours worked by 577 hours between 1979 and 2007. These increased hours certainly purchased higher incomes, but it is incorrect to equate higher income with increased living standards without reckoning for the *cost* of working this much more.

The relatively stagnant hourly wage growth over these decades is particularly dismaying when we realize that households in the middle fifth made extraordinary efforts to increase their educational attainment and also gained more potential labor market experience. For example, the share of workers in middle-income households who had a four-year college degree or more education rose from 14.5 percent in 1979 to 22.3 percent in 2007, an increase of more than 50 percent.

All in all, once we account for this increased effort on the part of American households, it is hard to find much evidence that the private economy has been particularly friendly to the longstanding American aspiration for improving living standards.

There is one exception to this generally poor labor market performance for middle-income households: the economic boom in the late 1990s. More than 90 percent of the growth in average annual wages for working-age households between 1979 and 2007 occurred between 1995 and 2000. Growth in annual earnings during these years was driven *more* by rising hourly wages than by increased hours of work. Without this brief period of genuine labor market success, the labor market for middle-income households during the three decades before the Great Recession would have been uniformly disastrous.

In short, there have been some clear victories in the march to better living standards in the decades preceding the Great Recession—the rise of social insurance programs and the brief period of genuine labor market tightness that spurred broad-based wage growth in the late 1990s—but family and household incomes over the business cycle from 2000 to 2007 experienced the weakest growth on record. And, as this chapter will demonstrate, there is plenty of reason to worry about what is to come.

Table notes and figure notes at the end of this chapter provide documentation for the data, as well as information on methodology, used in the tables and figures that follow.

The basic contours of American incomes

Analyses of American incomes often examine family or household income. Following the official U.S. Census Bureau definitions, a family is a group of two or more people related by birth, marriage, or adoption who reside together, whereas a household consists of all the people who occupy a housing unit. All families are, by definition, also part of a household, but the reverse is not necessarily true (for example, single-person households are not considered to be a family). In this chapter we document trends in both the family and household income distributions, specifying in each case which data series is under discussion. When families are grouped by race and ethnicity, the household head's race or ethnicity is used to categorize the family.

Using families as the unit of analysis allows us to study data over a longer time period (family income data are available from 1947 to 2010). Using household data, however, takes advantage of the greater detail available in public datasets for the post-1979 period. In addition, household data capture more of the population, because every person included in the annual Census survey of income (the Current Population Survey Annual Social and Economic Supplement) is placed into a household, but not necessarily into a family.

It is important to recognize that the average size of families and households changes over time. Between 1979 and 2007—the period examined most thoroughly in this chapter—the average size of families and households declined in nearly every income group. This means that, all else equal, growth in family or household income per person was faster than growth in total family or household income over this period. Some analysts contend that growth in family or household income per person is the only relevant measure of living standards and that income data unadjusted for changing family and household size over long periods therefore underestimate income growth.

There is at least a grain of truth to this argument: Clearly a household income of $100,000 is consistent with a much higher living standard if the household consists of a single person rather than a family of six. However, it is not entirely clear that diminishing family and household size can be interpreted as a pure economic good. Take the case of families with children, which have experienced roughly the same reduction in size as most other family and household categories. Although it sounds odd to non-economists to think of it this way, it is true that part of a family's decision about the number of children to have rests on the family's concept of children as "consumption goods;" if the price of having and raising children rises sharply relative to other consumption goods, this can lead families to having fewer children and consuming more of other goods. Because size-adjusted

household income is adjusted by the number of "children" but not by the number of "other consumption goods," this switch from one way that families spend resources (having children) to other ways (consuming other goods) automatically boosts some measured incomes. Similarly, if families decide to have fewer children because they don't expect income growth sufficient to ensure that their children are raised well, this could also mechanically raise size-adjusted income measures. For these reasons, we are unconvinced that the mechanical boost to size-adjusted household and family incomes should be banked as an unambiguous increase in living standards.

In addition, focusing simply on size-adjusted family or household income growth would entail making some very strong assumptions. The first assumption is that family or household resources are indeed evenly shared among all members, and that intra-household distribution has not changed over the decades. The second assumption is that nothing is changing in the wider economy to increase or decrease the economies of scale available from consumption goods that determine the potential costs and benefits of cohabitation. Imagine, for example, that the relative price of goods that cannot be shared among household members (medical care or education, for example) rises sharply over time while the relative price of goods that can be shared (rental costs, appliances) falls sharply. These relative price changes would diminish the cost of living in smaller households. Shrinking household size would be a rational response to changes in the economy, yet it reflects a genuine decline in utility (a rise in the price of something that cannot be shared among members of the household). Yet, to sterilize this change, to just mechanically adjust for household size, would fail to note this utility loss.

Because we are uncomfortable making the strong assumptions needed to focus solely on size-adjusted income levels, we report income levels for households and families unadjusted for changing family size. Although adjusting for family and household size changes would result in a higher income growth rate between 1979 and 2007, it would not generally affect trends in income distribution (as nearly all income groups experienced roughly similar changes in household size).

Family and household money income

Table 2.1 shows real average family "money income" by income fifth and of families in the top 5 percent of the income distribution. The data are presented for the business cycle peak years 1947, 1979, 1989, 2000, and 2007 as well as for 1995, the midpoint during the 1990s business cycle after which incomes grew rapidly across the board, and for 2010, the latest year for which we have data. "Money income" refers to earnings from work; government cash payments, such as Social Security and unemployment benefits; profits, interest payments, rents, and other cash income accruing to owners of businesses and capital assets; and other miscellaneous sources of cash income. Though capital gains are part of money income,

Table 2.1 Average family income, by income group, 1947–2010 (2011 dollars)

	Income fifth					Breakdown of top fifth	
	Bottom	Second	Middle	Fourth	Top	80th–<95th percentile	Top 5 percent
Real money income							
1947	$7,808	$18,584	$26,548	$36,075	$67,152	$53,097	$109,317
1979	17,318	37,442	56,466	77,740	133,340	111,995	197,373
1989	16,575	38,561	59,906	86,189	162,284	129,724	259,965
1995	16,508	38,035	59,550	87,129	175,047	133,327	300,208
2000	18,444	42,171	66,279	97,682	204,946	152,205	363,167
2007	17,430	41,550	66,651	99,667	202,335	155,298	343,448
2010	15,464	38,235	62,268	94,893	193,308	150,016	323,183
Average annual change							
1947–1979	2.5%	2.2%	2.4%	2.4%	2.2%	2.4%	1.9%
1979–1989	-0.4	0.3	0.6	1.0	2.0	1.5	2.8
1989–1995	-0.1	-0.2	-0.1	0.2	1.3	0.5	2.4
1995–2000	2.2	2.1	2.2	2.3	3.2	2.7	3.9
2000–2007	-0.8	-0.2	0.1	0.3	-0.2	0.3	-0.8
1979–2007	0.0	0.4	0.6	0.9	1.5	1.2	2.0
2007–2010	-3.9	-2.7	-2.2	-1.6	-1.5	-1.1	-2.0

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Tables F-2, F-3, and F-5)

they are not included in Table 2.1 because they are not included in the annual Current Population Survey (CPS) supplement that collects the data. Also not in the table, because they are not considered to be money income, are in-kind benefits from government or private sources, such as food stamps, housing vouchers, Medicaid, and employer contributions for health insurance premiums. Much of this section of the chapter focuses on money income because it is the measure most reliably tracked by the CPS Annual Social and Economic Supplement and allows for detailed analysis over a long period, in some cases six and a half decades. Later sections in this chapter examine datasets that include more comprehensive sources of income.

To construct the table, families were ranked from lowest to highest by income levels and then broken into equal fifths, with the top fifth broken down into families between the 80th and 95th percentiles and families in the top 5 percent. The

underlying data do not allow finer breakdowns within the top 5 percent (such as the top 1 percent), but data from other sources presented later in this chapter allow for detailed upper-percentile breakdowns.

The table highlights a key theme of this chapter: Between 1947 and 1979, family income growth was relatively uniform across the income distribution, but between 1979 and 1995, family income growth was greater further and further up the income distribution. In the late 1990s, growth was rapid and uniform among the bottom four-fifths and even more rapid at the very top. Then, between 2000 and 2007, income growth was weak across the board, even among families in the upper reaches of the income distribution, largely due to the decline in incomes associated with the burst of the stock market bubble in 2001. Later analysis will show that families at the very top of the distribution did well after the initial stock market decline hit its trough.

Average real income of the middle fifth of families grew from $56,466 in 1979 to $62,268 in 2010, an increase of 10.3 percent. Average real income of the top fifth rose from $133,340 to $193,308 (45.0 percent), and average real income of the top 5 percent increased from $197,373 to $323,183 (63.7 percent).

These disparate growth patterns hold for household incomes, though the data for households do not go back as far as for families. **Table 2.2** demonstrates that the average money incomes of households are lower than those of families. This makes sense, as single-person households, a group with lower-than-average incomes, are not included in family income data. The table also shows the same sharp rise in inequality after 1979 that was shown in family incomes. Income growth of households in the middle fifth lagged behind that of the top fifth in each period except 2000 to 2007, when middle-fifth incomes shrank just slightly less (0.1 percent less) than top-fifth incomes. Average real income of the middle fifth grew from $47,432 in 1979 to $50,865 in 2010, an increase of just 7.2 percent. Average real income of the top fifth rose from $124,917 to $174,985 (40.1 percent), and average real income of the top 5 percent increased from $190,513 to $296,763 (55.8 percent).

Table 2.3 shows the money income thresholds for income fifths and the top 5 percent of families and households. Whereas the previous table showed average income for these groups, this table shows their income ranges. These thresholds may help readers determine their own place in the income distribution. The thresholds also highlight the extent of income inequality in the upper end of the income distribution. For example, while Table 2.1 shows that the average income of the top 5 percent of families was $323,183 in 2010, Table 2.3 shows that the minimum income needed to be in the top 5 percent was much lower—$206,675. This means that even within the top 5 percent, families and households make much more at the upper end than at the lower end of the range.

Table 2.2 Average household income, by income group, 1967–2010 (2011 dollars)

	Income fifth					Breakdown of top fifth	
	Bottom	Second	Middle	Fourth	Top	80th–<95th percentile	Top 5 percent
Real money income							
1967	$9,420	$26,100	$41,668	$58,300	$104,920	$84,725	$165,505
1979	11,566	28,769	47,432	69,606	124,917	103,052	190,513
1989	12,249	30,475	50,658	76,626	149,790	119,051	242,009
1995	12,229	29,890	49,979	76,830	160,332	121,539	276,710
2000	13,266	33,123	55,159	85,747	185,812	137,866	329,650
2007	12,530	31,937	54,202	85,815	182,205	139,097	311,527
2010	11,382	29,540	50,865	81,534	174,985	134,393	296,763
Average annual change							
1967–1979	1.7%	0.8%	1.1%	1.5%	1.5%	1.6%	1.2%
1979–1989	0.6	0.6	0.7	1.0	1.8	1.5	2.4
1989–1995	0.0	-0.3	-0.2	0.0	1.1	0.3	2.3
1995–2000	1.6	2.1	2.0	2.2	3.0	2.6	3.6
2000–2007	-0.8	-0.5	-0.2	0.0	-0.3	0.1	-0.8
1979–2007	0.3	0.3	0.4	0.7	1.2	0.9	1.5
2007–2010	-3.2	-2.6	-2.1	-1.7	-1.3	-1.1	-1.6

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table H-3)

Table 2.4 introduces some elements of nonmoney income by displaying the sources of comprehensive income by income fifths and for the top 10 percent of households (separated into three mutually exclusive groups) in 2007. The table uses the household "comprehensive income" measure from the Congressional Budget Office, which includes several income sources (such as employer-sponsored health benefits and noncash government transfers in the "in-kind" column) that are not included in the CPS money income data.

As the table shows, money income (represented in this table by all the rows "Wages" through "Cash transfers") made up a large majority of total comprehensive income—86.1 percent. It also shows that the relative importance of income sources differed greatly among income fifths. For example, wages account for around 60 percent of total income for the middle three-fifths of the income distribution, yet

Table 2.3 Minimum income thresholds for family and household income, by income group, 1947–2010 (2011 dollars)

	Real money income threshold, by fifth					
	Bottom	Second	Middle	Fourth	Top	Top 5 percent
Family income						
1947	$0	$13,952	$22,513	$30,529	$43,318	$71,099
1979	0	28,471	46,817	66,326	91,330	146,517
1989	0	28,027	49,038	71,455	104,292	173,318
1995	0	27,945	48,336	71,783	105,890	181,206
2000	0	31,345	53,340	80,094	119,340	209,126
2007	0	30,225	53,705	81,355	122,183	213,928
2010	0	27,527	49,514	76,483	117,333	206,675
Household income						
1979	$0	$20,211	$37,534	$57,748	$83,731	$135,297
1989	0	21,184	40,281	61,910	94,064	160,685
1995	0	21,102	39,440	61,550	95,433	165,591
2000	0	23,405	43,100	68,142	106,791	189,666
2007	0	22,010	42,413	67,254	108,474	191,999
2010	0	20,631	39,243	63,683	103,222	186,515

Note: The bottom fifth begins at the first percentile, the second fifth at the 20th percentile, the middle fifth at the 40th percentile, the fourth fifth at the 60th percentile, and the top fifth at the 80th percentile of the income distribution.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Tables F-1 and H-1)

Table 2.4 Sources of pretax comprehensive income, by income group, 2007 (2011 dollars) *Part 1 of 2*

	Income fifth					Breakdown of top 10%			
	Bottom	Second	Middle	Fourth	Top	90th–<95th percentile	95th–<99th percentile	Top 1 percent	Average all households
Households (millions)	24.6	22.2	22.9	23.0	23.7	6.0	4.7	1.2	116.88 (Total)
Share of total pretax income									
Wages	50.5%	59.3%	60.5%	63.2%	48.4%	61.8%	55.6%	26.7%	54.3%
Proprietors' income	6.0	2.6	1.9	1.6	2.6	2.8	4.8	1.6	2.4
Other business income	0.1	0.6	0.9	1.1	8.2	3.3	7.3	15.5	4.6
Interest and dividends	1.0	1.2	1.9	2.6	7.6	5.0	7.1	12.1	5.2
Capital gains	0.3	0.4	0.6	1.1	13.8	3.8	6.3	31.3	8.1
Pensions	1.9	4.1	7.1	8.2	5.2	7.6	5.9	1.1	5.8
Cash transfers	20.3	12.2	9.6	6.6	2.3	3.3	2.3	0.4	5.7
In-kind income	15.4	13.1	11.1	8.7	3.6	5.2	3.5	0.6	6.9
Imputed taxes	4.4	5.1	5.3	5.7	7.3	6.5	6.0	9.5	6.5
Other income	0.2	1.4	1.2	1.2	1.2	1.2	1.0	1.3	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average									
Wages	$10,082	$27,346	$42,341	$64,528	$139,009	$121,552	$174,477	$542,615	$56,561
Proprietors' income	1,198	1,199	1,330	1,634	7,467	5,511	15,008	32,516	2,500
Other business income	20	277	630	1,123	23,551	6,580	22,803	315,001	4,792
Interest and dividends	200	553	1,330	2,655	21,828	9,890	22,130	245,904	5,416
Capital gains	60	184	420	1,123	39,635	7,451	19,908	636,099	8,437
Pensions	379	1,891	4,969	8,372	14,935	15,047	18,435	22,355	6,041
Cash transfers	4,053	5,626	6,719	6,739	6,606	6,410	7,082	8,129	5,937

Table 2.4 Sources of pretax comprehensive income, by income group, 2007 (2011 dollars) *Part 2 of 2*

	Income fifth					Breakdown of top 10%			
	Bottom	Second	Middle	Fourth	Top	90th–<95th percentile	95th–<99th percentile	Top 1 percent	Average all households
In-kind income	$3,075	$6,041	$7,768	$8,883	$10,339	$10,138	$11,039	$12,194	$7,187
Imputed taxes	878	2,352	3,709	5,820	20,966	12,745	18,971	193,065	6,771
Other income	40	646	840	1,225	3,446	2,362	3,245	26,419	625
Total	19,965	46,114	69,985	102,102	287,208	196,838	313,616	2,032,265	104,163
Shares of total income categories claimed by each group									
Wages	3.8%	9.2%	14.7%	22.5%	49.9%	11.0%	12.4%	9.9%	100.0%
Proprietors' income	9.8	8.8	10.1	12.5	58.8	11.0	23.4	13.0	100.0
Other business income	0.1	1.0	2.4	4.3	92.3	6.5	17.7	62.5	100.0
Interest and dividends	0.8	2.0	4.9	9.8	82.6	9.5	16.6	47.1	100.0
Capital gains	0.2	0.4	1.0	2.6	95.8	4.6	9.5	77.9	100.0
Pensions	1.3	5.9	16.0	27.1	49.7	12.7	12.2	3.8	100.0
Cash transfers	14.4	18.1	22.3	22.5	22.7	5.6	4.8	1.4	100.0
In-kind income	9.0	16.0	21.3	24.4	29.3	7.3	6.2	1.7	100.0
Imputed taxes	2.7	6.6	10.8	17.0	62.9	9.7	11.3	29.3	100.0
Other income	0.7	9.9	13.3	19.5	56.6	9.8	10.6	22.0	100.0
Average	4.0	8.3	13.1	19.1	55.5	9.6	12.0	19.9	100.0

Source: Authors' analysis of Congressional Budget Office (2010a)

only 26.7 percent of total income for the top 1 percent of households. Conversely, capital incomes (interest and dividends, capital gains, and business income other than proprietors' income) were less than 5 percent of total income for each fifth in the bottom four-fifths but 58.9 percent for the top 1 percent. This disproportionate importance of capital income for the top 1 percent of households will become important in later sections as we explore the sources of growing inequality since 1979.

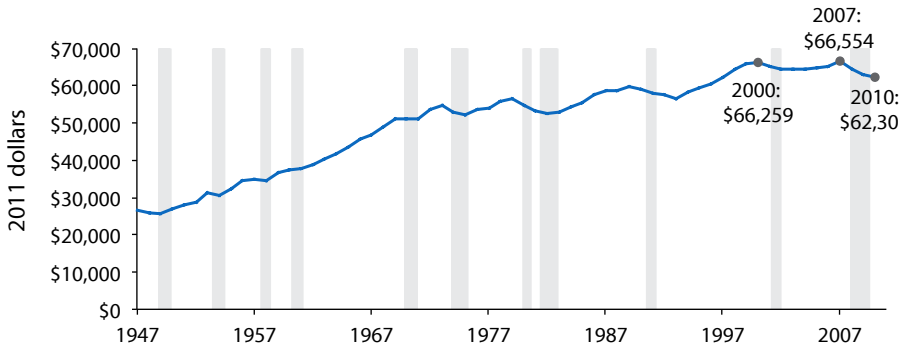
Because "proprietors' income" measures the earnings of businesses owned and operated by a single owner/employee, it is difficult to cleanly parse into either wage or capital income. In this chapter we tend to leave this income in its own category. Given that it is a small and shrinking share of overall comprehensive income (falling from 3.0 to 2.4 percent of overall income between 1979 and 2007), its inclusion in any particular income category would not significantly change trends or levels.

Median family income as a metric of economic performance

Changes over the full income distribution are examined later in the chapter; here, we focus on a commonly cited metric of economic performance—growth in median family money income. Median family income is simply the income of the family that is at the exact center of the income distribution, with half of families having higher incomes and half having lower incomes. **Figure 2A** charts real median family income from 1947 to 2010.

With a little squinting, we can see that median family income either grew much more slowly or fell during recessions (shaded grey on the graph) before generally beginning to grow shortly after the recessions ended. A key thing to notice about this figure is how long it took median family income to recover its

Figure 2A Real median family income, 1947–2010



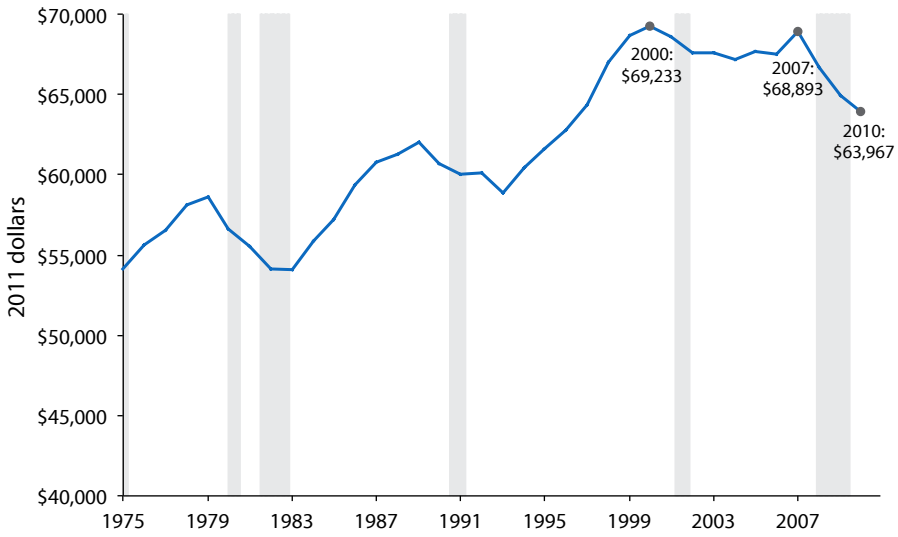
Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table F-5)

pre-recession level following the recessions of the early 1980s, the early 1990s, and the early 2000s—seven full years in each case. Further, even when median family income finally did surpass its previous 2000 peak in 2007, it was only 0.4 percent higher—$66,554 versus $66,259 (and by 2010 was back down to $62,301). In short, median family income growth has taken much longer to achieve real gains following recessions in recent decades than during pre-1980 business cycles. The next section of this chapter, which addresses the Great Recession and American incomes, will provide evidence that the sluggish growth of median family incomes following recessions is likely to continue in the coming years.

Median family income growth in the 2000s was even worse for working-age families, as shown in **Figure 2B**. Real median income of this group (which excludes families headed by persons more than 64 years old) never regained its 2000 peak of $69,233 following the 2001 recession. By 2007, it had only recovered to $68,893, 0.5 percent below the 2000 peak. By 2010, in the wake of the Great Recession and its aftermath, the median income of working-age families was $63,967, 7.6 percent below the 2000 peak. Even if the median income of working-age families began growing at the relatively rapid annual rate that characterized the 1989–2000 business cycle (1.0 percent average annual growth), the

Figure 2B Real median income of working-age families, 1975–2010



Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement microdata

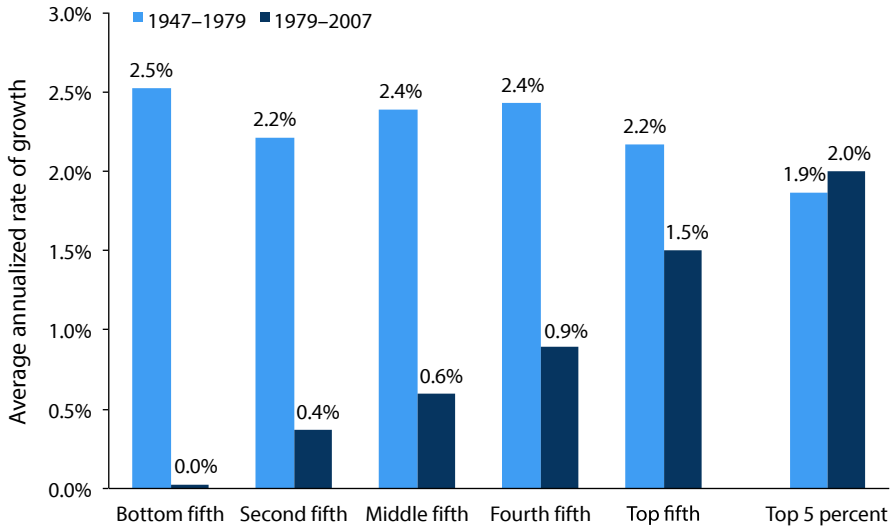
2000s peak would not be reached until 2018—constituting nearly two decades of lost income growth for this group.

A look at income by income fifths

Of course, median family income represents only one point in the U.S. income distribution. **Figure 2C** shows average annualized income growth for family income fifths (calculated by ranking incomes from lowest to highest and then dividing into fifths) as well as for the top 5 percent of families. Between 1947 and 1979, income growth was relatively uniform for all fifths and even the top 5 percent. Average annual growth rates ranged from 1.9 percent (for the top 5 percent) to 2.5 percent (for the bottom fifth).

The 1979–2007 period had a very different pattern, with faster growth among the higher-income fifths and the fastest growth for families in the top 5 percent. These data clearly reveal the contrast between the broadly shared growth seen from World War II through the 1970s and the concentrated-at-the-top growth seen since.

Figure 2C Average family income growth, by income group, 1947–2007



Note: Data are for money income.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Tables F-2, F-3, and F-5)

Median family income by race, ethnicity, and nativity

Family money income differs significantly by racial and ethnic group. **Table 2.5** shows real median family income by race and ethnicity for business cycle peaks, as well as for 1995, and 2010. It also shows income earned by black and Hispanic families as a share of white median family income. In 2010, for example, the median income was $39,715 for black families and $40,785 for Hispanic families; both were less than 63 percent of white median family income, which was $65,138.

While Table 2.5 shows that white families have consistently higher levels of income than African American or Hispanic families, it also highlights trends in median income growth. For example, both white and black families experienced

Table 2.5 Median family income, by race and ethnicity, 1947–2010 (2011 dollars)

				As a share of white family income	
	White	Black*	Hispanic**	Black	Hispanic
1947	$27,807	$14,216	n.a.	51.1%	n.a.
1969	53,120	32,537	n.a.	61.3	n.a.
1979	59,013	33,417	$40,910	56.6	69.3%
1989	63,004	35,393	41,062	56.2	65.2
1995	62,494	38,057	36,005	60.9	57.6
2000	69,259	43,983	44,983	63.5	64.9
2007	69,886	43,545	44,003	62.3	63.0
2010	65,138	39,715	40,785	61.0	62.6
Average annual change					
1947–1969	3.0%	3.8%	n.a.		
1969–1979	1.1	0.3	n.a.		
1979–1989	0.7	0.6	0.0%		
1989–2000	-0.1	1.2	0.8		
1995–2000	2.1	2.9	4.6		
2000–2007	0.1	-0.1	-0.3		
1979–2007	0.5	0.8	0.2		
2007–2010	-2.3	-3.0	-2.5		

* Prior to 1967, data for blacks include all nonwhites.
** Persons of Hispanic origin may be of any race.
Note: Data are for money income.

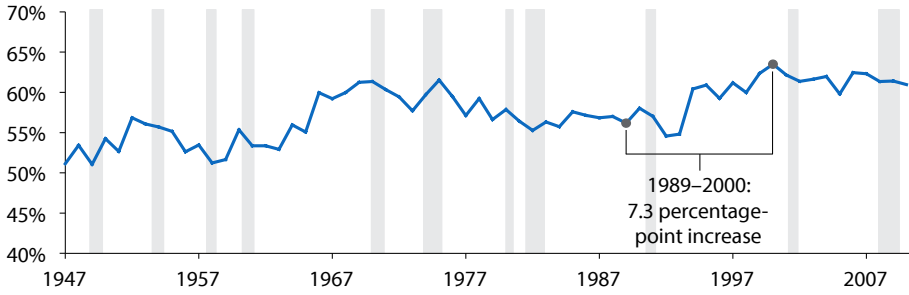
Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table F-5)

their highest annual income growth rates between 1947 and 1967 (3.0 and 3.8 percent, respectively) while income growth for both racial groups dropped to essentially zero between 2000 and 2007 (white median family income grew an average of 0.1 percent annually and African American median family income shrank by 0.1 percent annually).

Another key finding of this table is shown visually in **Figure 2D**. Between 1947 and 1969, the relative incomes of African American families rose substantially—from 51.1 percent of white family incomes to 61.3 percent. In the 1970s and 1980s, this relative progress reversed and, by 1989, the median income of African American families was only 56.2 percent of median white family income. However, rapid growth in the 1990s pushed this relative income to a historic high of 63.5 percent by 2000, an increase of 7.3 percentage points over the 1989 level. But by 2007 this relative income had declined to 62.3 percent, and by 2010 it was down to 61.0 percent. In 2010, median income was $65,138 for white families, compared with $40,785 for Hispanic families and $39,715 for black families.

This fluctuation foreshadows a key finding of the next section: Typical American families and households need low rates of unemployment if they are to achieve fast gains in income (especially gains that are not just purchased by working longer hours), and the benefits of low unemployment disproportionately accrue to often-disadvantaged groups of workers. In fact, the tight labor markets of the late 1990s were actually a prime driver of relative income gains for African Americans, gains that were comparable to those experienced during the height of the Civil Rights revolution.

Figure 2D Black median family income, as a share of white median family income, 1947–2010



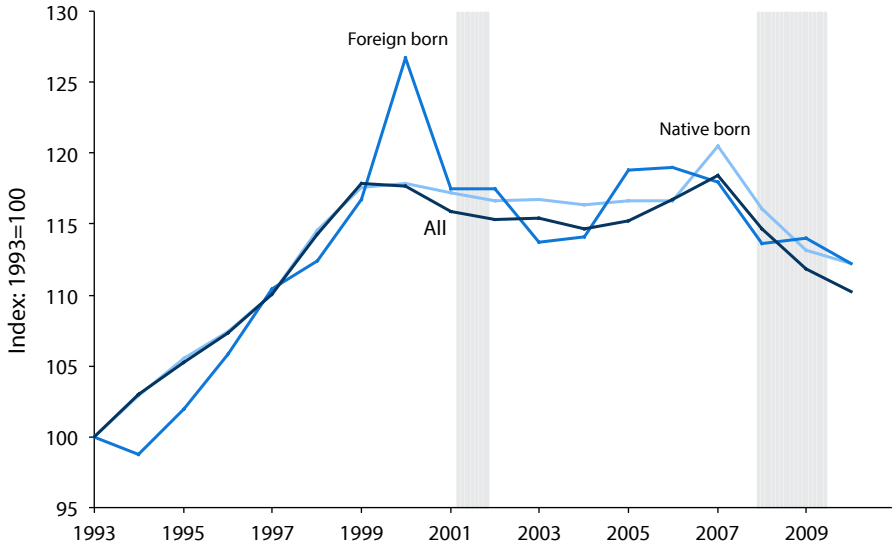
Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table F-5)

Lastly, it is also worth looking at the basic contours of American incomes by nativity status. Many economic observers have tried to excuse the poor growth in median incomes in recent decades by arguing that a rise in the share of poorer immigrants in the population is pulling down median incomes through composition effects. The idea is that if a substantial number of new immigrants enter the country and have below-median incomes, they would bring down the overall U.S. median income even if the income distribution of those already here did not change. **Figure 2E** shows median family income growth by nativity status since 1993 (the first year data on nativity status are available). This series shows that median income growth for native families very closely matched overall median income growth between 1993 and 2010, with cumulative growth of 12.2 percent for native families and 10.2 percent growth overall. The fact that growth trends for native-born families are very similar to the overall growth trends means that a rising share of immigrants over this period cannot explain poor median income growth.

Of course, this exercise simply tests the composition effect of nativity status on income growth. If competition from immigrants did push down wages of native-born workers, then simply removing immigrant families from these data would not remove this effect (since it is embedded in the native-born incomes).

Figure 2E Median family income growth, by nativity, 1993–2010



Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement microdata

However, the clear responsiveness of both immigrant and native-born family incomes to overall economic conditions (incomes rose sharply during the tight labor markets of the late 1990s and had sluggish growth during the low-employment-growth 2000s) does suggest that overall economic trends seem to be a first-order determinant of income growth for both sets of families.

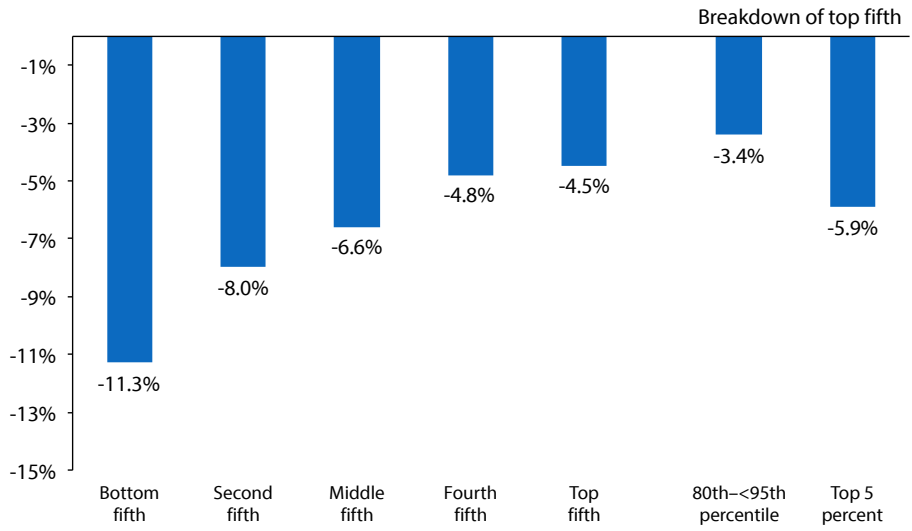
The Great Recession and American incomes

What is now known as the Great Recession officially began in December 2007 and ended in June 2009. Yet the economy did not begin registering reliable employment growth until the last quarter of 2010. By the end of 2010, this extended period of economic weakness had taken a heavy toll on American incomes. This section examines the actual and projected effects of the Great Recession on various income and demographic groups.

Impact by income group

Figure 2F shows declines in family money incomes between 2007 and 2010 by income fifth. Over the downturn that began with the Great Recession, family money incomes declined significantly for all income fifths, with the

Figure 2F Change in average family income, by income group, 2007–2010



Note: Data are for money income.

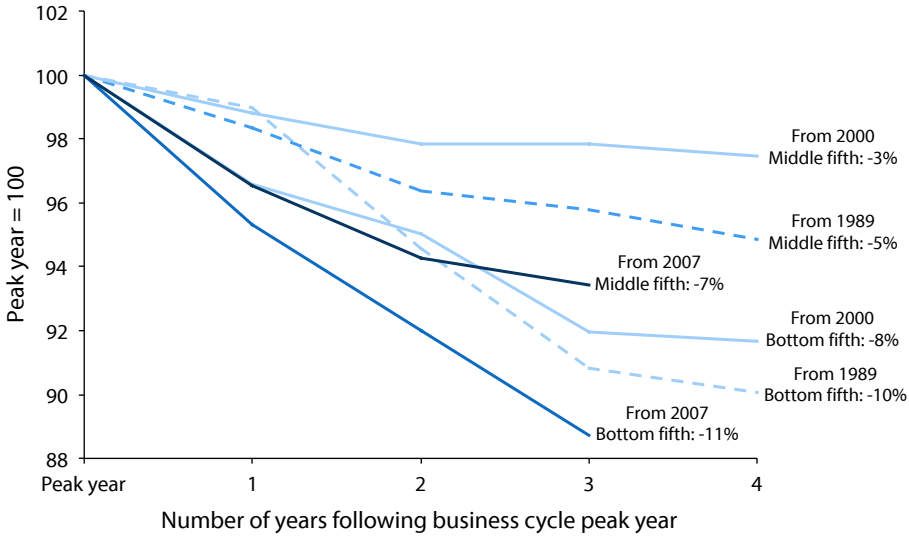
Source: Authors' analysis of the Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table F-3)

lower fifths hit hardest: Incomes fell 11.3 percent for the bottom fifth (from $17,430 to $15,464 as shown in Table 2.1), 6.6 percent for the middle fifth (from $66,651 to $62,268), and 4.5 percent for the top fifth (from $202,335 to $193,308).

This pattern is familiar. **Figure 2G** shows the fall in real family incomes for the bottom and middle income fifths over the past three downturns, beginning with the business cycle peak year before the start of each recession. In each instance, the income decline caused by the recession is larger for the lowest income fifth than for the middle fifth, as workers at the lower end of the income distribution tend to be harder hit by job loss and hours reductions during downturns than are workers further up the income scale.

However, Figure 2F does display a perhaps-surprising feature of recent recessions: income losses experienced by families at the very top of the income distribution. Incomes of the top 5 percent of families fell 5.9 percent between 2007 and 2010—a loss greater than that suffered by families in the fourth and top fifths of the distribution. There is, however, a reasonable explanation for this pattern (documented in a longer timespan in Figure 2H ahead). A large share of income of families at the top of the income distribution is linked directly to asset

Figure 2G Change in real family income from business cycle peak years 1989, 2000, and 2007



Note: Data are for money income.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table F-3)

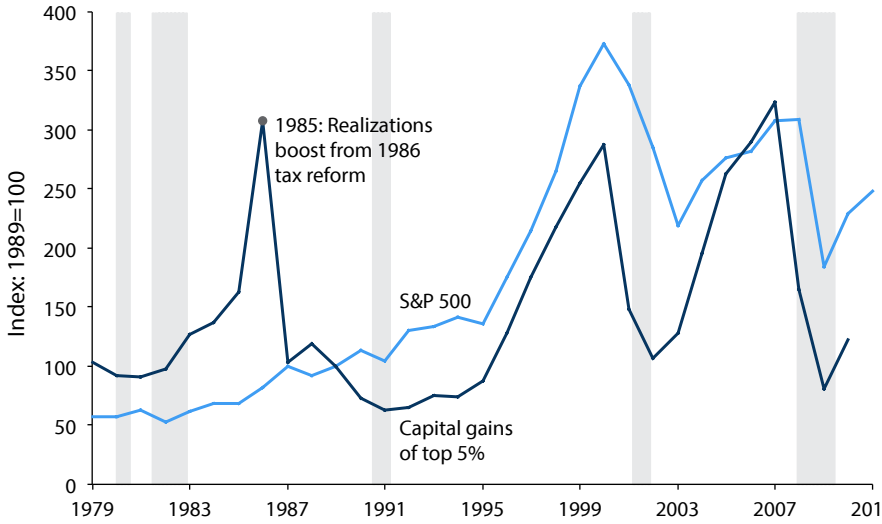
markets (through the exercise of stock options and bonuses tied to measures of corporate profitability, for example). These asset markets lost significant value when the stock market bubble of the early 2000s and the housing market bubble of the mid-to-late 2000s burst. Under such conditions, income declines at the very top of the income distribution often exceed those in the next lower groups and (though not the case in 2007–2010) are sometimes even larger than at the bottom of the distribution.

Some economic observers have argued that the income decline among families at the top implies that the Great Recession "solved" the problem of economic inequality. This is almost surely not the case.

Capital gains are an important source of income for the most affluent households, constituting 21.9 percent of total comprehensive income for the top 5 percent of households in 2007. Because it is tied to stock market valuations, capital gains income tends to fall sharply during recessions, and this is precisely what happened following the stock market crash at the end of 2008.

However, capital gains also tend to rise sharply once economic recovery begins, and capital gains incomes of the most affluent households tend to rise. **Figure 2H** plots the value of the Standard and Poor's index of 500 companies (a

Figure 2H Average capital gains of the top 5% of the income distribution and the S&P 500 composite price index, 1979–2011



Note: Income distribution is for tax units. A tax unit consists of the people represented on a single tax return. Shaded areas denote recessions.

Source: Authors' analysis of Piketty and Saez (2012, Table A-6 and A-8) and Shiller (2012)

leading measure of stock market health) between 1979 and 2011 against capital gains income for the top 5 percent of tax units in the income distribution between 1979 and 2010. It shows that the capital gains incomes of these households closely follow asset values. This largely explains the big drops and rapid recoveries of high incomes during and after recessions. In short, there is a persistent upward trend in income growth for those at the top of the income distribution that is only temporarily halted during recessions accompanied by stark drops in stock values (as the last two recessions have been). Extrapolating from the recovery in the stock market in the last two years, it would be safe to bet that incomes at the top of the income distribution will register much stronger recovery than incomes below the top in 2011 and beyond. It should also be noted that wage and salary incomes of the highest-income households are also often tied to stock market performance, because these households tend to receive stock options and bonuses linked to firm performance. In short, the highest incomes do tend to fall further when recessions are associated with stock market declines, but tend also to quickly rise following the market's recovery.

Impact by race and ethnicity

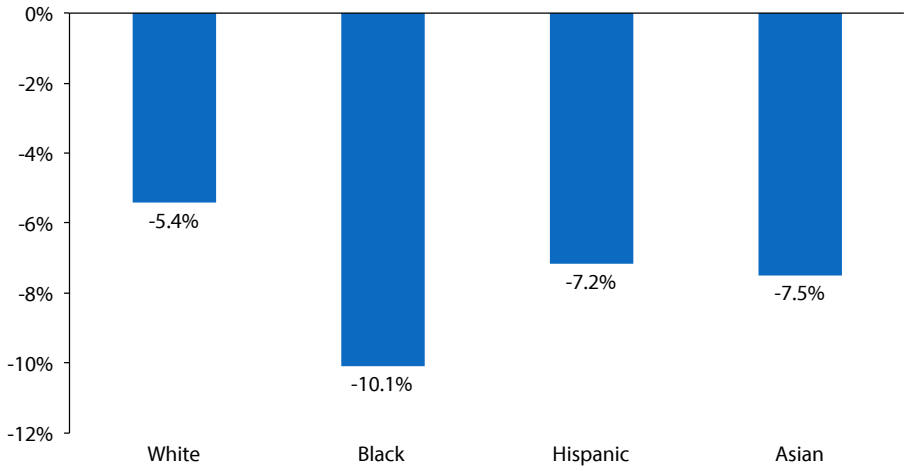
Income declines caused by the Great Recession have also differed by race and ethnic group, with racial and ethnic minority households experiencing the largest declines. **Figure 2I** shows that between 2007 and 2010, real median household income declined 5.4 percent for the median white household, 7.2 percent for the median Hispanic household, 7.5 percent for the median Asian American household, and 10.1 percent for the median African American household.

Income losses projected for years to come

While the Great Recession officially ended in 2009, the damage to family income growth from elevated unemployment is likely not over. The unemployment rate averaged 8.9 percent in 2011, and is generally not expected to fall below 7 percent until 2016.

Figure 2J shows, from 2000 onward, the actual and projected family income growth for the middle fifth of the income distribution. The projected paths are modeled based on the relationship between income growth and the unemployment rate from 1948 to 2010. The projected unemployment rates for 2012 and later come from two prominent economic forecasts—one by the Congressional Budget Office (CBO) and one by Moody's Analytics. Our forecast overestimated income growth in the 2000s because the decade's unemployment rates, low by historical standards, did not translate into large income gains (as emphasized in the previous section). That is, incomes grew less than expected in the 2000s given relatively low unemployment rates.

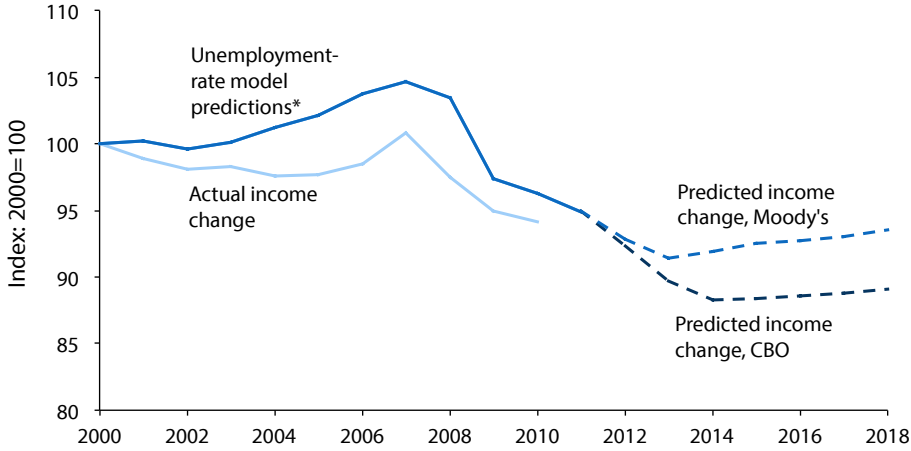
Figure 2I Change in real median household income, by race and ethnicity, 2007–2010



Note: Data are for money income.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table H-5)

Figure 2J Change in real family income of the middle fifth, actual and predicted, 2000–2018



* Path of income growth projected by a model based on the relationship between income growth and the unemployment rate from 1948–2010.

Note: Data are for money income.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Tables F-2, F-3, and F-5) and analysis based on forecasted unemployment rates from Congressional Budget Office (2012) and Moody's Analytics (2012)

However, the statistical relationship captured in the prediction line does reflect the turning point in family income in 2007 and does a decent job of predicting the extent of income declines after 2007: Actual incomes of the middle fifth fell by 6.7 percent, compared with a projected 8.0 percent decline.

The outcome of this exercise for 2012 and later is grim. Using the CBO unemployment forecast, income of the middle fifth of families in 2018 will still be more than 10 percent below the 2000 level. Even under the more-optimistic Moody's Analytics unemployment forecast, middle fifth income will not reach its 2000 level by 2018. This analysis suggests again that roughly two decades are likely to pass before typical families regain the level of income they had in 2000, due to the weak income performance of the 2000s expansion combined with the very long reach of the Great Recession.

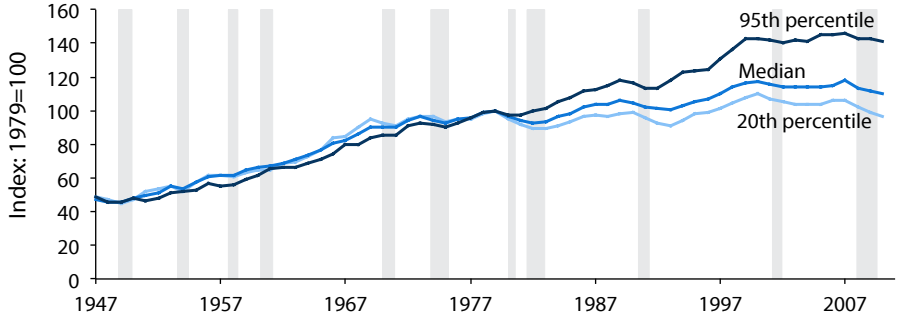
Rising inequality of American incomes

As shown earlier in Figure 2C, family income growth since 1979 has become vastly more unequal than growth between 1947 and 1979. This section explores income inequality, first tracking trends in family income and thereafter focusing on household income. Switching to analyses of household income has two advantages. First, as already mentioned, household data capture more people because virtually everyone in the population belongs, by definition, to a household, while not everyone belongs to a family. Second, crucial aspects of the debate about American income inequality in recent years have centered around some forms of income that are not captured in the publicly available annual CPS data on family money incomes. In particular, noncash transfers and compensation such as housing assistance, Medicare, Medicaid, and contributions to employer-sponsored health insurance (ESI) premiums are not available in the data commonly used to chart family incomes. However, the Congressional Budget Office has released a series of reports on the distribution of household incomes and taxation that use publicly unavailable data to apportion these noncash benefits across the distribution of households. Much of the following analyses will draw on this extraordinarily useful dataset.

Family income inequality

Figure 2K charts money income growth for families at the 20th percentile, the median, and the 95th percentile of the income distribution since 1947. The results are striking—income growth that was nearly uniform across income levels for decades diverges markedly after 1979. From 1947 to 1979, annual family incomes at the 20th and the 95th percentiles grew 2.3 percent on average while median family income grew 2.4 percent. But between 1979 and 2007, average annual income of families at the 20th percentile grew just 0.2 percent (from $28,471 in 1979 to $30,225 in 2007), compared with 0.6 percent for median families (from

Figure 2K Income growth for families at the 20th, 50th, and 95th percentiles, 1947–2010



Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Tables F-1 and F-5)

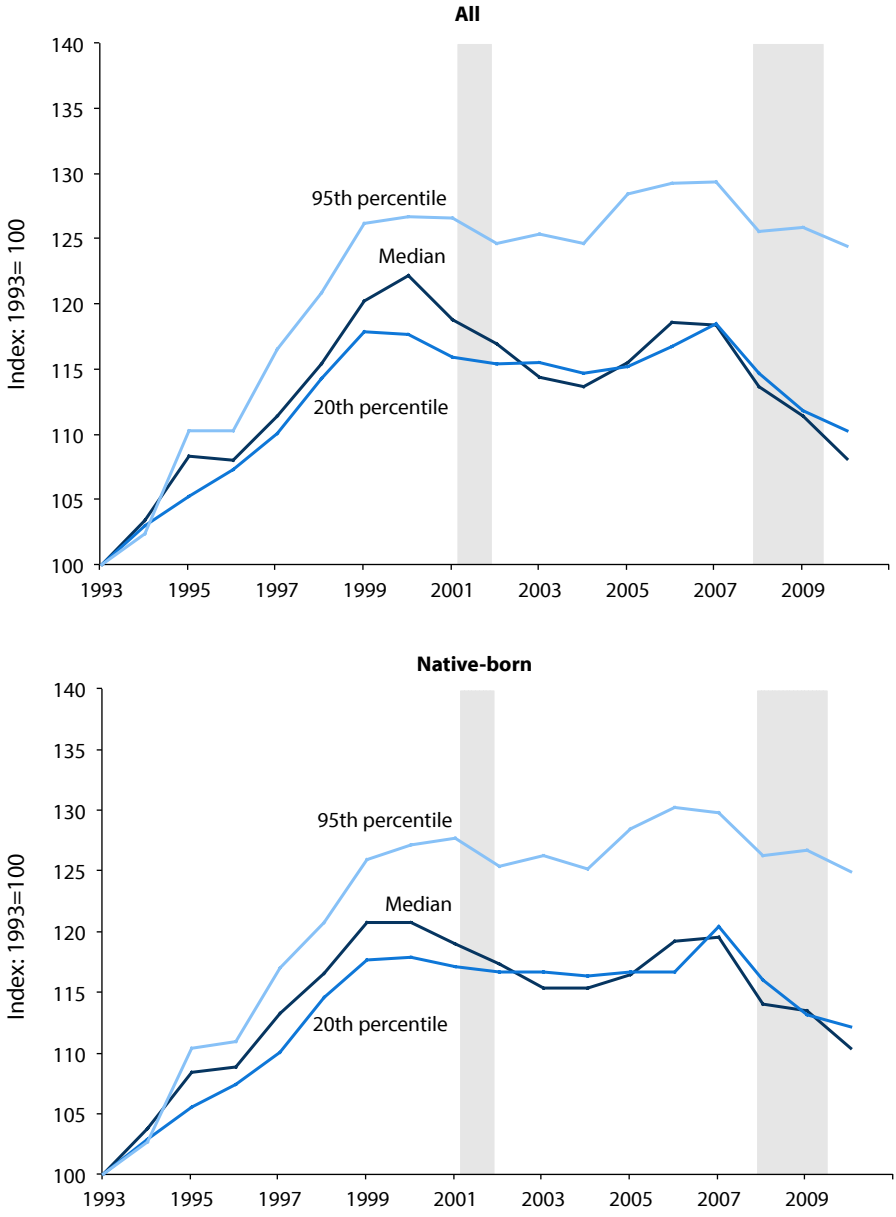
$56,553 in 1979 to $66,554 in 2007) and 1.4 percent for families at the 95th percentile (from $146,517 in 1979 to $213,928 in 2007).

This pattern is important for a couple of reasons. First, it demonstrates that rising inequality is not inevitable in advanced market economies—the United States and other rich countries have had extended periods of rapid overall economic growth with gains broadly shared across the income distribution. Second, it shows that the increasing inequality documented in the post-1979 household data that follow is not unique to this dataset but appears in analyses of all datasets of American incomes over time, regardless of whether they track family or household income.

Before turning to household data based on comprehensive incomes, we will use the family money income data to examine the influence of nativity status on rising inequality. As noted earlier in the chapter, many economic observers blame the sluggish growth of median family incomes on the "compositional effect" of a rising share of immigrant families in the United States at the bottom of the income distribution. That argument was shown to be false, since the median family income of native-born Americans scarcely differed from the median family income of all Americans between 1993 and 2010 (see Figure 2E).

Figure 2L illustrates the possible effect of nativity status on income inequality by displaying income growth of the 20th percentile, the median, and the 95th percentile of all families and of just native-born families. The trends for all families and native-born famililes track each other closely, meaning that the growing income inequality in recent decades is not simply due to a growing share of non-native families in the U.S. population.

Figure 2L Income growth for families at the 20th, 50th, and 95th percentiles, by nativity, 1993–2010



Note: Data are for money income. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement microdata

Unequal growth of comprehensive household incomes suggests diverging well-being

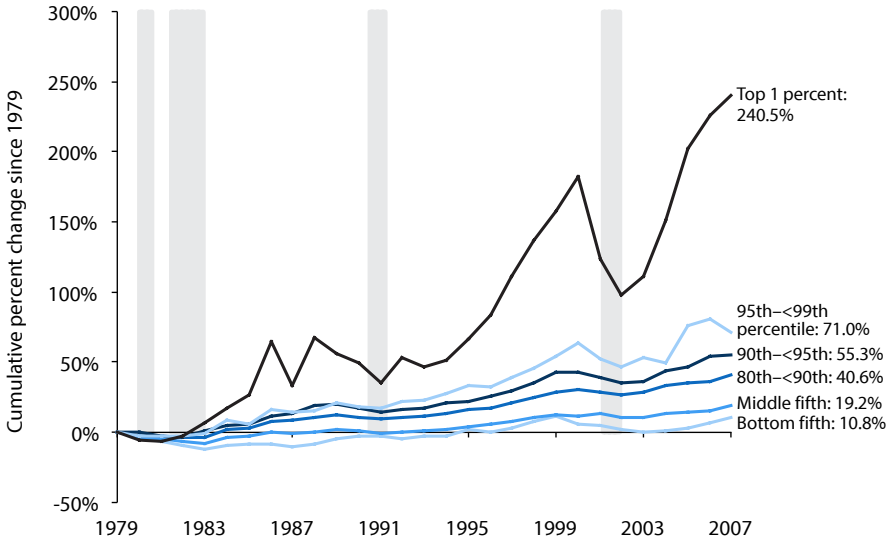
The CBO data used in the following analyses of household income are based on "comprehensive income." This income measure includes market incomes (earnings from labor, dividends, interest payments, realized capital gains, and rents and other business income that accrue to owners of capital), transfer payments from government (cash transfers, such as Social Security and unemployment insurance benefits, and noncash transfers, such as housing vouchers, food stamps, Medicare, and Medicaid), noncash employment income (the value of employer-sponsored insurance paid to employees by employers), and imputed taxes (taxes, such as the corporate income tax or the employer portion of payroll tax, that are nominally paid by non-households but that, as most economists agree, are actually borne by households in the form of lower wages and incomes).

Measuring comprehensive income allows us to assess trends in living standards across the distribution of household income (though perhaps not perfectly—instances where the CBO may overstate income gains are discussed later in this section). However, the measure can lead to faulty conclusions about the related question of how well the private U.S. economy is generating increasing living standards. As will be noted at the end of this chapter, the income gains of American households in recent decades are not clear evidence that the private U.S. economy is generating efficient and fair outcomes. Rather, these gains are often evidence of just how hard American households have worked, by supplying more hours of labor to the paid labor markets and ensuring that they constantly upgrade their educational levels and work experience.

Figure 2M illustrates a key finding on comprehensive income trends by showing a striking pattern in average income growth by income group: Income growth is strongly positively correlated with a household's rank in the income distribution, and the gap in income growth between the highest-income households and the rest is enormous. For example, the top 1 percent of households registered cumulative income growth of 240.5 percent between 1979 and 2007, while households in the bottom and middle fifths of the income distribution posted gains of 10.8 and 19.2 percent, respectively.

Importantly, although income growth for households between the 80th and 90th percentiles and 90th and 95th percentiles was substantial (40.6 and 55.3 percent, respectively), this growth still far lagged that at the top: Income growth of households between the 80th and 90th percentiles was just 16.9 percent of growth for the top 1 percent, while that of households between the 90th and 95th percentiles was just 23.0 percent of growth for the top 1 percent. While this chapter has a special focus on how households in the middle of the income distribution have been faring, it is important to note that in terms of income

Figure 2M Change in real annual household income, by income group, 1979–2007



Note: Data are for comprehensive income. Shaded areas denote recessions.

Source: Authors' analysis of data from the Congressional Budget Office (2010a)

growth the top 1 percent has been pulling away, not just from the middle, but from other households in the top income fifth.

Sharp rise in income inequality apparent in every major data source

The sharp rise in income inequality in the United States between 1979 and 2007 is apparent in every major data source and is almost universally recognized by researchers. **Table 2.6** shows the growth in average incomes accounted for by the bottom 95 percent, top 5 percent, and top 1 percent of the population analyzed by various income data sources and measures.

At first glance, these estimates are perhaps surprisingly bimodal. For example, CPS data show that the share of overall average household money income growth attributable to the top 5 percent of households in the household money income distribution was 37 percent (a contribution far in excess of their share of the population). A study that supplements CPS data with estimates of taxes paid and of in-kind incomes from employer-provided benefits and government transfers (Burkhauser, Larrimore, and Simon 2011) found that the top 5 percent of households accounted for 26.6 percent of overall average household income

Table 2.6 Share of average income growth accounted for by the bottom 95 percent, top 5 percent, and top 1 percent, by dataset and income concept, 1979–2007

	Bottom 95 percent	Top 5 percent	Top 1 percent
Top-coded			
Burkhauser et al.; CPS household money income, adjusted	73.4%	26.6%	—
CPS household money income	63.0	37.0	—
Not top-coded			
CBO, household comprehensive income	46.1	53.9	38.3%
Piketty and Saez, cash market income	19.1	80.9	59.8
CBO, household comprehensive income adjusted to match Burkhauser et al.*	48.1	51.9	—

* Capital gains are excluded, post–tax-and-transfer growth is shown, and in-kind benefits such as health care are allowed to boost bottom-fifth incomes to the same degree as allowed by Burkhauser, Larrimore, and Simon (2011).

Source: Burkhauser, Larrimore, and Simon (2011, Table 4), Current Population Survey Annual Social and Economic Supplement Historical Income Tables (Table H-3), Congressional Budget Office (2010a), authors' analysis of Piketty and Saez (2012, Table A-6)

growth, an estimate of broadly similar magnitude—differing by just slightly over 10 percentage points—to the estimate using the unadjusted CPS data.

On the other hand, datasets that use Internal Revenue Service sources for the highest-income households, such as those on household income from the CBO (2010a) and on tax units from Piketty and Saez (2012), show much higher shares of average income growth accounted for by the top 5 percent of the income distribution. The top 5 percent of households accounted for 53.9 percent of average household comprehensive income growth according to CBO data that, as mentioned earlier, uses IRS sources for top incomes and also includes the in-kind income tracked by Burkhauser, Larrimore, and Simon (2011) and capital gains. The widely referenced dataset from Piketty and Saez, published in 2003 and updated to 2010 (Piketty and Saez 2012), tracks only cash, market-based incomes; it indicates that the top 5 percent of tax units accounted for 80.9 percent of average growth from 1979 to 2007. (A tax unit consists of the people represented on a single tax return.)

The differences between these estimates seem to be largely due to whether the data used to construct the growth rates of the top 5 percent were "top-coded." Top-coding refers to when incomes above a given threshold are given a single

uniform value; it is generally done in publicly available datasets to ensure confidentiality of the highest-income units in the sample. But because so much income growth in recent decades has occurred at the very top of the income distribution, datasets that include this top-code show much smaller increases in inequality than datasets that are not top-coded. The CPS data on household money income, and the Burkhauser, Larrimore, and Simon (2011) data based on the CPS data but that add in other types of income, are top-coded. The Piketty and Saez data and the CBO comprehensive income data are not top-coded, and this largely explains why they capture the greater increase in the gap between average growth of the top 5 percent, and everybody else.

The last row in the table provides calculations based on the CBO data but adjusted to exactly match the Burkhauser, Larrimore, and Simon (2011) concepts; it strips out capital gains, shows post-tax, post-transfer growth, and allows in-kind benefits such as health care to boost bottom-fifth incomes to the same degree estimated by Burkhauser and coauthors. Using the Burkhauser concepts, the CBO data, which are not top-coded, display much larger increases in inequality than do the CPS data, which are top-coded.

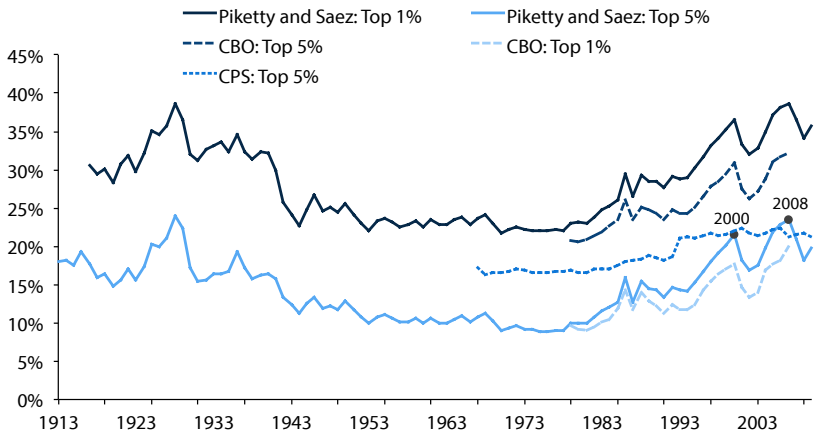
Piketty and Saez's widely referenced dataset confirms inequality trends shown in this chapter

One of the most referenced datasets showing the rise in American inequality in recent decades was published by Thomas Piketty and Emmanuel Saez in 2003 and is regularly updated. The Piketty and Saez data are incredibly valuable for several reasons. First, it is an extremely long data series, compiled from consistent, high-quality data from 1913 to 2010. In addition, the data are not "top-coded," meaning the highest incomes are included (including even the top 1.0 and 0.1 percent), enabling us to chart the full extent of rising inequality.

However, most of this chapter uses other income data sources, primarily because the Piketty and Saez data do not map perfectly to family or households incomes. Instead, Piketty and Saez use "tax units," the people represented on a single tax return. Further, the Piketty and Saez data show pretax and pretransfer market incomes, data which do not provide useful information for debates about how noncash income and transfers affect the bottom 99 percent of American incomes. Finally, the Piketty and Saez data do not provide breakdowns within the bottom 90 percent.

Nevertheless, the Piketty and Saez data are too important and useful to completely leave out of any discussion of American incomes. **Figure 2AA** compares their most iconic finding—the share of overall income claimed by the top 1 percent of American tax units—with the share of income claimed by the top 5 and top 1 percent of families or households from CBO and Current Population Survey datasets. All tell the same basic story about income inequality: Those with the highest incomes have claimed ever-greater shares of income in recent decades.

Figure 2AA Share of income held by high-income groups, 1913–2010



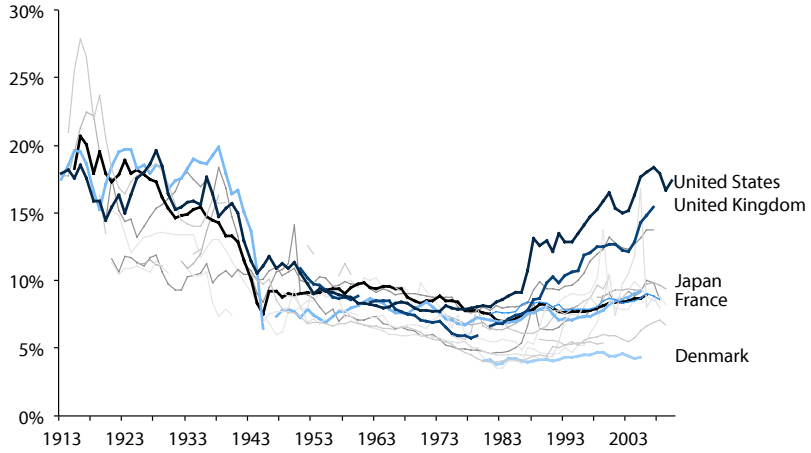
Note: Data show market income of tax units (Piketty and Saez), comprehensive household income (CBO), and household money income (CPS). All datasets except CPS include capital gains income. Sharp drops in income shares after 2000 and 2008 were due to the burst of the dot-com bubble in 2001 and the financial crisis of 2008.

Source: Authors' analysis of Piketty and Saez (2012, Table A-3), Congressional Budget Office (2010a), and Current Population Survey Annual Social and Economic Supplement *Historical Income Tables* (Table H-2)

The Piketty and Saez data also contribute to our discussion by showing that the rise in U.S. income inequality is unique in scale among all developed economies. Some other countries (mostly those that have pursued economic policies closer to those of the United States) have seen some increase in income inequality in recent decades, while others have seen very little increase. But no country in the developed world has experienced

a rise in inequality as pronounced as that seen in the United States (**Figure 2AB**).

Figure 2AB Share of income held by top 1 percent in developed countries, 1913–2009



Note: Thin gray lines plot the share of market income held by the top 1 percent of tax units in Australia, Canada, Finland, Germany, Ireland, Netherlands, New Zealand, Norway, Spain, Sweden, and Switzerland.

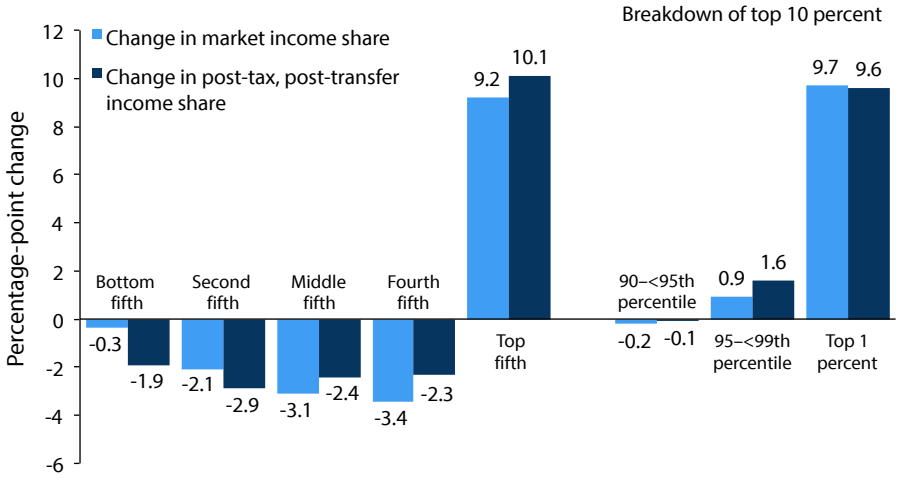
Source: Authors' analysis of *The World Top Incomes* database (Alvaredo, Atkinson, Piketty, and Saez various years)

The limited impact of taxes and transfers relative to market income

Although tax and budget policies have dominated economic policy debates in recent years, it is useful to remember that the large increases in income inequality over recent decades have been overwhelmingly driven by market incomes, i.e., incomes households bring in before government taxes and transfers such as Social Security and unemployment benefits.

Figure 2N shows changes in the share of total income claimed by households in various income groups using two different measures of income shares. The lighter-shaded bar in each income category shows percentage-point changes in the market-income share (pretax, pre-transfer). For example, the market-income share of the middle fifth of households dropped by 3.1 percentage points between 1979 and 2007. The darker-shaded bar shows changes in the post-tax, post-transfer income share. For example, the post-tax, post-transfer income share of the middle fifth dropped by 2.4 percentage points over this period.

Figure 2N Change in the share of market income and post-tax, post-transfer income that households claim, by income group, 1979–2007



Source: Authors' analysis of Congressional Budget Office (2010a and 2010b)

The most striking aspect of this chart is that the bottom four-fifths of households (that is, 80 percent of Americans) lost income share, however defined, between 1979 and 2007. The big winners in terms of overall income shares (again, however defined) are the top 1 percent of households, which have seen their share of overall income rise by close to 10 percentage points (9.7 percentage points for market-income share and 9.6 percentage points for post-tax, post-transfer income share).

This chart also demonstrates that changes in post-tax, post-transfer income are largely determined by changes in market income. For example, gains in market incomes contributed a huge proportion (9.2 percentage points) of the entire 10.1 percentage-point increase in post-tax, post-transfer income shares of households in the top fifth. This means that any changes in government transfer policy (e.g., unemployment benefits and Social Security) or in tax policy have played relatively minor roles in changes of post-tax, post-transfer income; the key driver has been changes in market-based incomes, namely what households have received in wages, benefits, and capital incomes.

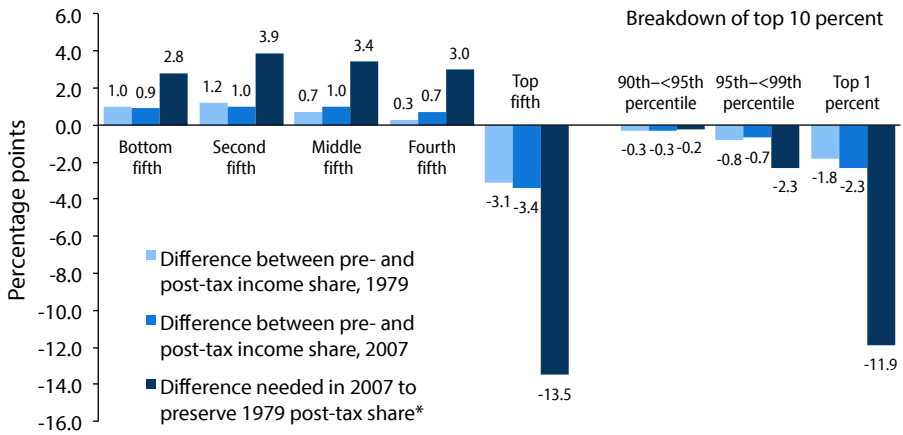
This does not negate the importance of tax and budget policies. Indeed, we could argue that lower tax rates on the very rich have given them extra incentive to secure policies that redistribute more market incomes to them. For example, they could choose to make it harder for low- and moderate-income workers to form unions or to fight increases in the minimum wage. However, the lesser role of tax

and transfer policies in driving overall income growth does imply that efforts to improve the lot of low- and moderate-income families cannot rely solely on the tax-and-transfer system.

Still, it remains useful to examine what developments in tax-and-transfer payments have and have not done in affecting income inequality. By some measures, the changing effect of taxes and transfers on overall income inequality has exacerbated the trend towards growing inequality in market incomes. For example, the CBO (2011) shows that the change in taxes and transfers between 1979 and 2007 actually increased the Gini coefficient (a measure of inequality; a higher value indicates a less equal distribution of resources) of post-tax comprehensive income.

Indeed, taxes and transfers have been shown to be wholly ineffective in countering the large rise in market income inequality since 1979. **Figure 2O**, which illustrates income groups' share of pretax and post-tax comprehensive income, highlights how ineffective tax policies have been in countering increasing inequality of market income. Each set of three bars corresponds to households in different segments of the income distribution. The first bar in each set shows the change in that group's income share—measured as the difference between pretax and post-tax

Figure 2O Effect of tax policies on each household income group's share of total income, 1979 and 2007, and the difference needed in 2007 to preserve 1979 post-tax shares



* This shows the degree to which the tax system would have needed to increase 2007 pretax income shares to keep each group's share of post-tax income stable from 1979 to 2007, given the increasing inequality of pretax income over this period.

Note: Data are for comprehensive income. The changes in the difference needed in 2007 to preserve 1979 post-tax shares do not sum to zero due to the presence of negative-income households in CBO data.

Source: Authors' analysis of Congressional Budget Office (2010a and 2010b)

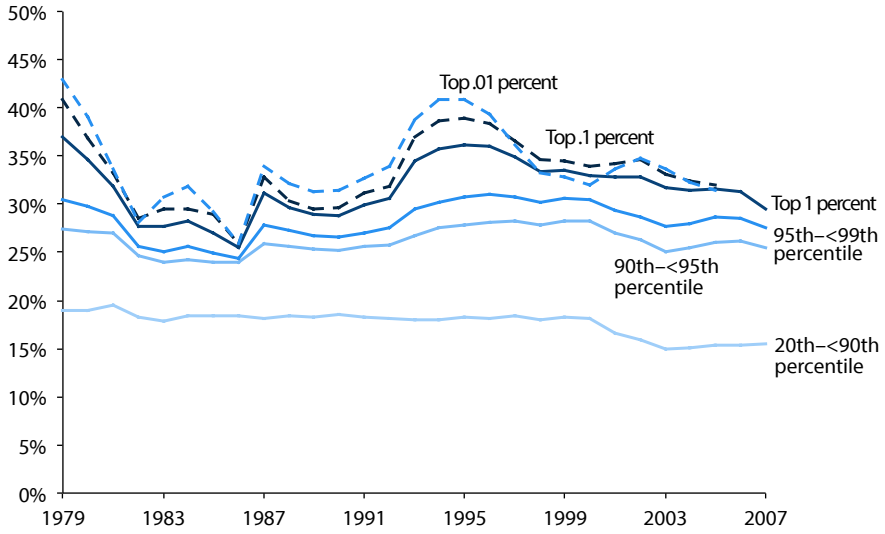
share—due to tax policy in 1979. For example, in 1979, the tax system boosted the share of total income going to the bottom fifth of households by 1.0 percentage point and boosted the share of total income going to the second fifth by 1.2 percentage points. The second bar in each set shows the difference between pretax and post-tax share of total income in 2007. In 2007, the tax system boosted the share of total income going to the bottom fifth of households by 0.9 percentage points and increased the share of total income going to the second fifth by 1.0 percentage point, both slight declines relative to 1979. In other words, taxes boosted these groups' relative income shares less in 2007 than they did in 1979.

Given the deterioration in market income shares for the bottom four fifths of the income distribution shown in Figure 2N, the tax system actually would have had to do more to smooth out inequality just to keep their 1979 shares of post-tax income constant. The last bar in each set shows what boost the tax system would have needed to provide in order to keep each group's share of post-tax income stable from 1979 to 2007, given the increasing inequality in market income over this period. For the bottom fifth of households, the tax system would have needed to add 2.8 percentage points to pretax income share in 2007 to preserve their 1979 post-tax share; and the tax system would have needed to add 3.9 percentage points to income to restore the second fifth of households to their 1979 post-tax income share. Instead, the tax system boosted these groups' pretax share by 0.9 percentage points and 1.0 percentage point, respectively, in 2007. One way to interpret this is to say that the tax system, given underlying trends in market income, has not only boosted the bottom two fifths' pretax income share by less than it used to, it boosted it by less than one-third of what was needed to have kept the their post-tax income shares constant since 1979. Given this weak impact, it seems clear that changes in tax rates have, at best, been totally ineffective in combating large increases in inequality since 1979.

Actual data on tax rates demonstrate why this finding is unsurprising. Effective tax rates by income fifth have converged rapidly in recent years, and average federal tax rates for the top 1 percent of households fell from 37.0 percent in 1979 to 29.5 percent in 2007. While effective tax rates fell across the entire household income distribution, the overall effective rate for the entire income distribution only fell from 22.2 percent to 20.4 percent, a much smaller decline than that for the highest-income households. **Figure 2P** shows effective tax rates for households at various points in the income distribution.

The data in Figure 2P underlie most of the remaining examination of the tax-and-transfer system's impacts on inequality trends over recent decades. It is important to note that these data may well understate the decline in tax rates for the very richest households over time. First, the trend of declining rates on the highest incomes predates 1979, the starting point of the CBO data in the figure. Second, even as marginal rates have fallen, the rapid rise in incomes of the most well-off households actually increases their effective tax rates, all else equal,

Figure 2P Average effective federal tax rates, by household income group, 1979–2007



Note: Data are for comprehensive household income.

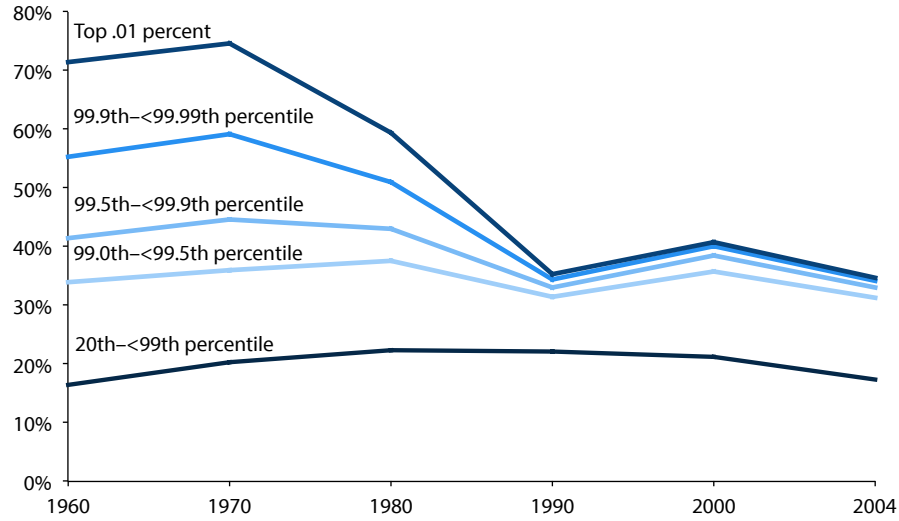
Source: Authors' analysis of Congressional Budget Office (2008 and 2010a)

by subjecting a greater share of their total income to the highest marginal rates. (Changes in effective tax rates are thus the net effect of legislated lowered rates and the higher rates that result from increased incomes.) The CBO data do not separate the changes in effective tax rates due to policy from those due to changes in the underlying income growth of rich households. Third, the CBO data do not include gift taxes and estate taxes. These taxes are paid disproportionately by the highest-income households and have fallen precipitously for decades.

Figure 2Q provides (at least partial) correction for the each of these three understatements. Based on the work of Piketty and Saez (2007), it provides effective tax rates that include gift taxes and estate taxes for finely grained income groupings over a longer period of time. The figure shows an extraordinary convergence of tax rates across the income distribution.

Table 2.7 details some of these tax changes using data from the CBO (2010a). The table clearly shows that the federal income tax remains progressive despite changes during the 2000s that eroded progressivity. In each year, average effective tax rates rose smoothly with income. Further, the large expansion of the Earned Income Tax Credit (EITC) during the Clinton administration greatly reduced low-income households' effective tax rate—which has actually been consistently

Figure 2Q Average effective federal tax rates, by income group, 1960–2004



Note: Data are for tax units (people represented on a single tax return).

Source: Authors' analysis of Piketty and Saez (2007, Table 2)

negative in recent decades. While the federal income tax has remained progressive for any given year, policy has changed the level of its progressivity over time. Between 1989 and 2000, for example, the effective income tax rate on the top 1 percent of households rose from 19.9 percent to 24.2 percent, in large part because of tax increases on high-income households during the Clinton administration. Of course, as noted in the discussion of Figure 2P, the simple rates reported in this table do not fully reflect policy changes that reduced tax rates on high-income households. These households experienced fast income growth in the 1979-and-on period under discussion, which, all else equal, would have led to rising effective tax rates for them as more of their income was subject to the highest marginal rates. The fact that the effective income tax rate for the top 1 percent fell between 2000 and 2007 (from 24.2 percent to 19.0 percent) is testament to the impact of policies (the Bush administration tax cuts) that reduced tax rates at the high end.

The table also indicates the pronounced progressivity of the corporate income tax—a tax that in 2007 averaged less than 1 percent of income for the bottom 80 percent of households, but was 8.8 percent of income for the top 1 percent.

The table also shows that federal payroll taxes are much flatter (i.e., less progressive) than income taxes. Because the tax base for funding Social Security is capped (at just over $110,000 in 2012, for example), the payroll tax rate actually falls sharply at the high end of the income distribution, with the top 1 percent

Table 2.7 Effective tax rates for selected federal taxes, by income group, 1979–2007

Income group	Personal income tax				Payroll tax				Corporate income tax				Excise tax			
	1979	1989	2000	2007	1979	1989	2000	2007	1979	1989	2000	2007	1979	1989	2000	2007
Bottom fifth	0.0%	-1.6%	-4.6%	-6.8%	5.3%	7.1%	8.2%	8.8%	1.1%	0.6%	0.5%	0.4%	1.6%	1.8%	2.3%	1.6%
Second fifth	4.1	2.9	1.5	-0.4	7.7	8.9	9.4	9.5	1.2	0.8	0.6	0.5	1.3	1.2	1.4	1.0
Middle fifth	7.5	6.0	5.0	3.3	8.6	9.8	9.6	9.4	1.4	1.1	0.9	0.8	1.1	1.0	1.1	0.8
Fourth fifth	10.1	8.3	8.1	6.2	8.5	10.0	10.4	9.5	1.6	1.2	1.0	1.1	0.9	0.9	0.9	0.7
Top fifth	15.7	14.6	17.5	14.4	5.4	6.6	6.3	5.7	5.7	3.5	3.7	4.6	0.7	0.6	0.5	0.4
Top 10 percent	17.4	16.3	19.7	16.2	4.2	5.1	5.0	4.5	7.4	4.4	4.4	5.7	0.7	0.5	0.4	0.3
Top 5 percent	19.0	17.7	21.6	17.6	2.8	3.7	3.8	3.3	9.5	5.3	5.2	6.8	0.6	0.4	0.4	0.2
Top 1 percent	21.8	19.9	24.2	19.0	0.9	1.4	1.9	1.6	13.8	7.2	6.7	8.8	0.5	0.3	0.2	0.1
All	**11.0**	**10.2**	**11.8**	**9.3**	**6.9**	**8.1**	**7.9**	**7.4**	**3.4**	**2.3**	**2.4**	**3.0**	**1.0**	**0.8**	**0.9**	**0.6**

Note: Income groups reflect comprehensive household income.

Source: Authors' analysis of Congressional Budget Office (2010a)

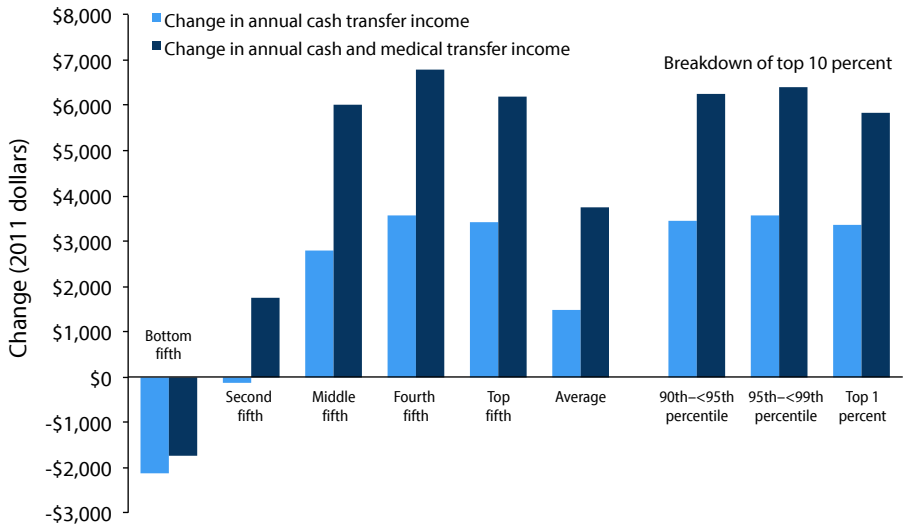
paying only 1.6 percent of income in 2007, as opposed to the 9.4 percent paid by the middle fifth of households.

Figure 2R shows changes on the transfer side of tax-and-transfer policy. The bottom 40 percent of households saw outright declines in average annual cash transfer income (such as Social Security and unemployment benefit payments) between 1979 and 2007. For the bottom fifth this decline is large; they received $2,125 less in cash transfers in 2007 than they received in 1979. For the middle, fourth, and top income fifths, cash transfers have grown steadily over time, rising by $2,786, $3,562, and $3,409, respectively, between 1979 and 2007.

When one adds in the "fungible value" of government transfers for health care (i.e., the value of Medicare and Medicaid to recipients as calculated by the CBO), transfer income of the second fifth rises by $1,735 in 2007 as compared with 1979, still far less than the $6,019, $6,778, and $6,202 increase including these transfers for the middle, fourth, and top fifths, respectively.

These medical transfers have done little to boost the change in overall transfers received by the bottom fifth of households, changing the $2,125 cash loss into a $1,730 overall loss. However, part of the failure of medical transfers to boost incomes of the bottom fifth is a symptom of how the data are constructed.

Figure 2R Change in real cash and medical transfer income, by income group, 1979–2007



Note: Income groups reflect household comprehensive income.

Source: Authors' analysis of Congressional Budget Office (2010a and 2010b)

For each person who reports receiving these transfers, the CBO assigns an income value equal to the average per-beneficiary cost. But the CBO counts as a gain in comprehensive income only those parts of Medicaid and Medicare transfers that boost a household's potential for purchasing non-health-care-related goods. Because many poor households have incomes that are not much greater, and sometimes less, than the per-beneficiary cost of Medicaid and Medicare, this means that the boost to non-health-care-related consumption possibilities (i.e., the "fungible value" of these benefits) is quite small.

Lastly, we can combine data on taxes and transfers by income group to measure their net impact on household incomes. The basic data are provided in **Table 2.8**, which shows the effective tax rate as well as the transfer rate (the value of government transfer payments divided by comprehensive income). Lastly, the table calculates a net tax-and-transfer rate—the rate that shows how much the combination of taxes and transfers either boosts or reduces comprehensive incomes. Note that a negative "tax rate net of transfers" means that transfers are larger than taxes and therefore the tax-and-transfer system together provide an income boost to the household.

The findings for the bottom fifth of households are striking: The net effect of taxes and transfers boosted household incomes by 37.2 percent in 1979 but by only 28.3 percent in 2007. In other words, the tax rate net of transfers increased over this period by 8.8 percentage points for the bottom fifth, as shown in the last row of the table. For groups within the top 10 percent, particularly the top 1 percent of households, the tax rate net of transfers, while starting from a much higher level, moved in the other direction, dropping significantly between 1979 and 2007. However, the biggest "swing" in the tax rate net of transfers was actually for the middle fifth: In 1979 their tax rate net of transfers was 10.2 percent, but by 2007 it had dropped to -1.3 percent, meaning that in 2007 the incomes of the middle fifth were boosted 1.3 percent on average by the tax-and-transfer system.

The last row of the table summarizes the data by measuring how the change in the effect of the tax-and-transfer system between 1979 and 2007 affected household income.

The last three rows of Table 2.8 are displayed visually in **Figure 2S**. The lightest-shaded bar in each set shows that between 1979 and 2007 the tax rate declined across the entire income distribution, though the declines were greatest for the top 1 percent. But the transfer rate, depicted in the second bar in each set, increased for every group except the bottom fifth, for whom it dropped by 12.8 percentage points. Putting these two data points together, we find that the bottom fifth of the income distribution saw their tax rate net of transfers increase by 8.8 percent over this period, while rates for the top four fifths dropped, with particularly large declines for the middle fifth (11.5 percentage points), the fourth fifth (9.3 percentage points) and the top 1 percent (7.9 percentage points). Recall from

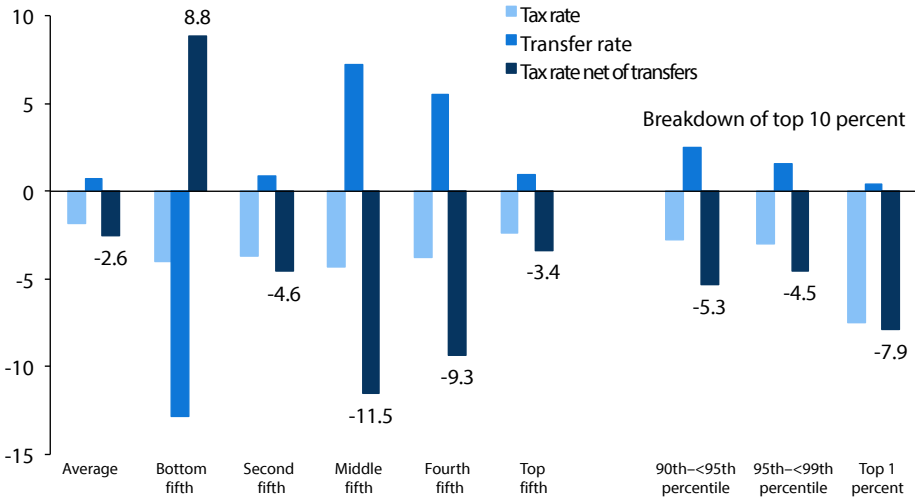
Table 2.8 Tax rate, transfer rate, and tax rate net of transfers, by income group, 1979–2007

		Household income fifth					Breakdown of top 10 percent		
	All households	Bottom	Second	Middle	Fourth	Top	90th–<95th percentile	95th–<99th percentile	Top 1 percent
1979									
Effective tax rate	22.2%	8.0%	14.3%	18.6%	21.2%	27.5%	28.7%	30.5%	37.0%
Transfer rate	8.3	45.2	19.2	8.4	4.9	2.6	0.4	0.4	0.2
Tax rate net of transfers	13.9	-37.2	-4.9	10.2	16.3	24.9	28.3	30.1	36.8
2007									
Effective tax rate	20.4%	4.0%	10.6%	14.3%	17.4%	25.1%	25.9%	27.5%	29.5%
Transfer rate	9.1	32.3	20.1	15.6	10.4	3.5	2.9	1.9	0.6
Tax rate net of transfers	11.3	-28.3	-9.5	-1.3	7.0	21.6	23.0	25.6	28.9
Percentage-point change, 1979–2007									
Effective tax rate	-1.8	-4.0	-3.7	-4.3	-3.8	-2.4	-2.8	-3.0	-7.5
Transfer rate	0.8	-12.8	0.9	7.2	5.5	1.0	2.5	1.5	0.4
Tax rate net of transfers	-2.6	8.8	-4.6	-11.5	-9.3	-3.4	-5.3	-4.5	-7.9

Note: Income groups reflect comprehensive income.

Source: Authors' analysis of Congressional Budget Office (2010a and 2010b)

Figure 2S Change in tax rate, transfer rate, and tax rate net of transfers, by income group, 1979–2007



Note: Income groups reflect comprehensive income.

Source: Authors' analysis of Congressional Budget Office (2010a and 2010b)

Figure 2N, however, that favorable changes in the tax-and-transfer system for the middle portion of the income distribution did not even come close to offsetting their declining share of market income.

In conclusion, our review of market incomes vis-a-vis tax-and-transfer policy finds that most of the rise in inequality in recent decades has been driven by trends in market income. The equalizing effect of tax-and-transfer policy has been, at best, wholly ineffective in countering inequality and, at worst, has exacerbated the rise in market-driven inequality.

Factors behind the large rise in inequality of market incomes

There are basically three developments that caused the large increase in inequality of market incomes between 1979 and 2007: concentration of labor incomes, concentration of capital incomes, and a shift in the share of overall income from labor to capital incomes. Though not necessarily a significant contributor every year, each factor had a strong influence on rising inequality of market incomes during certain timespans within that period.

Market incomes of households can basically be classified as derived either from labor services or from ownership of capital assets. Labor services are work hours provided by household members to the paid labor force. Earnings from

labor services depend on the amount worked and the pay per unit of work, usually hourly pay (wage and benefit) rates. Pay rates, in turn, depend on many factors, some of which likely reflect a given worker's underlying productivity (educational attainment and experience, for example), and some of which reflect historical and institutional influences on pay rates (such as industry, race and ethnicity, gender, and nativity status; Chapter 4 covers these influences in detail).

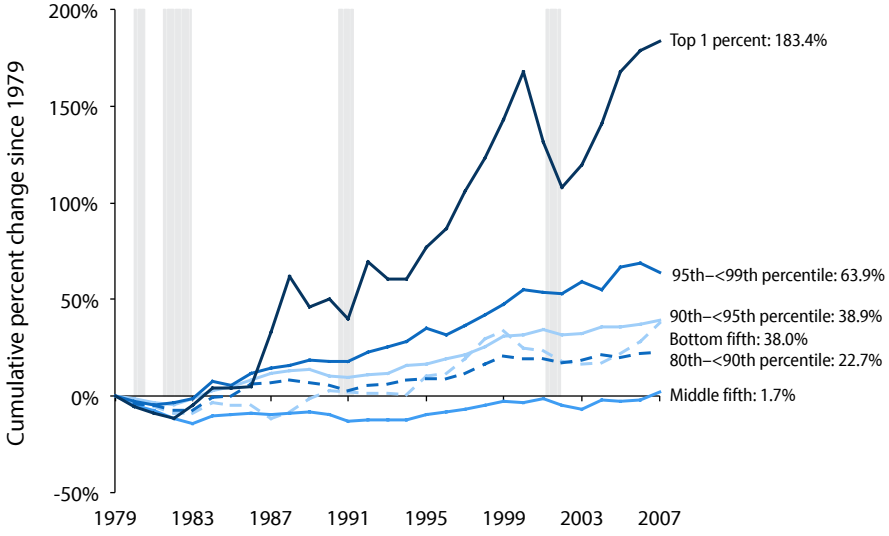
Capital incomes are the returns to owning physical and financial capital, i.e., claims to income generated by businesses or government plants and equipment. The income derived from owning this capital comes in the form of interest payments, dividends, realized capital gains, rent, and other business income. Essentially, capital incomes are the returns to holding wealth, whereas labor incomes are the returns to work.

On average, households in all income fifths generate some income from both sources. Obviously, a greater concentration of either labor or capital income in higher income brackets widens income inequality. But because capital incomes are much more concentrated at the top of the income distribution than labor incomes (Table 2.4 showed these shares for 2007), an overall shift in the share of all income from labor earnings to capital incomes will also tend to exacerbate income inequality. The next two figures and one table examine each of these factors in turn.

Figure 2T shows cumulative changes in real annual wages and salaries of households at various points on the income scale between 1979 and 2007. The data, which capture changes in how many household members work, how many hours they work, and how much they earn per hour, show the rapid relative growth of such labor income for the top 1 percent of households—183.4 percent, compared with only 1.7 percent for the middle fifth of households. Perhaps surprisingly, wages of the bottom fifth of households rose by a seemingly healthy 38.0 percent over this period. But given that average wages of this group were only $7,942 in 1979, this represents a per-household increase of only $3,017 over 28 years. Further, 87 percent of this increase occurred between 1994 and 1999, a period of rapid declines in unemployment that culminated in the lowest levels of unemployment in a generation. The lesson that very tight labor markets are needed to spur rapid wage growth for households at the bottom of the wage distribution is explored further in Chapter 4.

A commonly cited explanation for this divergence of labor earnings—rising educational disparities—does not seem particularly convincing as a key driver of the trend toward greater concentration of labor earnings. **Table 2.9** shows the changing educational composition of the workforce (as measured by work hours) by household income level. For households in each income distribution grouping, it shows the share of the total hours worked by workers with different education levels. The data suggest a large increase in educational attainment of the top 5 percent of working households: The share of work hours in this group accounted for by workers without a high school degree fell from 6.3 percent in 1979 to 1.2

Figure 2T Change in real annual household wages, by income group, 1979–2007



Note: Shaded areas denote recessions.

Source: Authors' analysis of Congressional Budget Office data (2010a)

percent in 2007, while the share of work hours by workers with an advanced degree rose from 24.3 to 36.9 percent.

However, the educational upgrading of other income groups is also dramatic. For example, for households in the fourth income fifth, the share of all hours accounted for by workers with a four-year college degree more than doubled between 1979 and 2007, rising from 11.4 percent to 23.8 percent. In the middle fifth, the share with a college degree also saw a big jump, from 9.4 percent in 1979 to 16.7 percent in 2007, while the share with less than a high school degree dropped by more than half, from 22.4 percent to 9.8 percent. The fact that increases in educational attainment at the top of the income distribution have not dramatically outpaced increases in educational attainment lower down the distribution means that educational upgrading cannot explain the dramatic increases in income inequality over this period.

Figure 2U is very similar to Figure 2T, charting cumulative growth in average annual capital income instead of labor income. This concentration of capital income growth among high-income households is striking. Between 1979 and 2007, average capital incomes of the top 1 percent rose by 309.3 percent. Those

Table 2.9 Educational attainment, by income group, selected years, 1979–2007 *(Part 1 of 2)*

	1979	1989	1995	2000	2007
Bottom fifth					
Less than high school	45.3%	35.5%	34.1%	32.6%	30.4%
High school only	33.4	40.1	36.9	38.7	37.8
Some college	15.2	18.0	23.0	21.9	23.7
College graduate	3.9	4.3	4.7	5.5	6.3
Advanced degree	2.3	2.1	1.3	1.2	1.8
Second fifth					
Less than high school	32.5%	23.1%	21.3%	20.6%	17.6%
High school only	39.4	44.3	41.7	39.6	39.2
Some college	19.1	22.5	26.5	28.9	30.1
College graduate	5.8	6.9	8.4	8.7	10.5
Advanced degree	3.3	3.3	2.3	2.2	2.6
Middle fifth					
Less than high school	22.4%	14.8%	12.2%	11.7%	9.8%
High school only	41.6	43.6	39.4	37.4	35.5
Some college	21.5	25.6	31.3	32.5	32.4
College graduate	9.4	10.6	13.5	14.2	16.7
Advanced degree	5.1	5.5	3.7	4.2	5.6
Fourth fifth					
Less than high school	17.4%	9.6%	7.3%	6.4%	4.9%
High school only	39.7	37.4	33.6	31.1	28.2
Some college	23.5	28.3	32.2	32.3	32.6
College graduate	11.4	15.7	19.2	21.8	23.8
Advanced degree	8.0	9.1	7.7	8.4	10.6
80th–<95th percentile					
Less than high school	11.3%	5.7%	3.4%	3.0%	2.4%
High school only	35.7	28.1	23.1	20.8	18.7
Some college	24.6	26.4	28.9	27.9	26.4
College graduate	15.5	22.5	28.7	30.5	32.5
Advanced degree	12.9	17.4	15.9	17.8	20.0

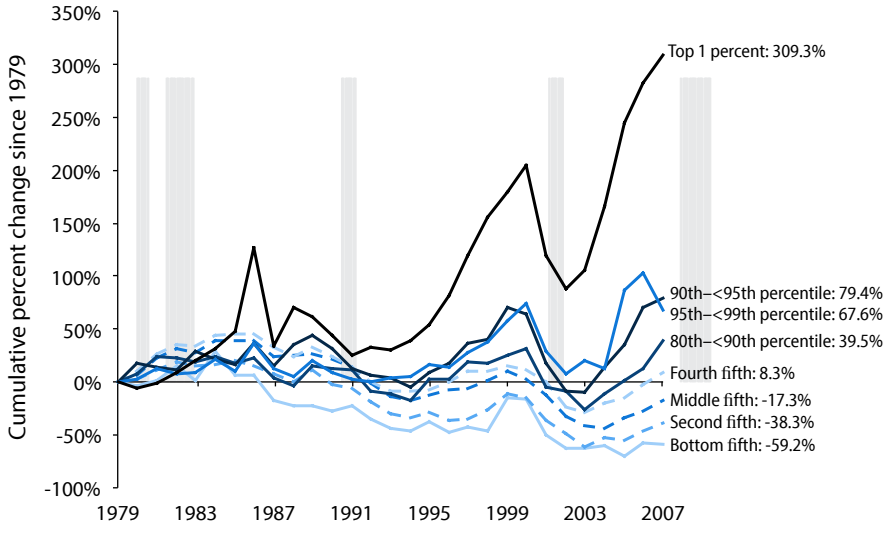
Table 2.9 Educational attainment, by income group, selected years, 1979–2007 *(Part 2 of 2)*

	1979	1989	1995	2000	2007
Top 5 percent					
Less than high school	6.3%	2.2%	1.9%	1.5%	1.2%
High school only	24.5	16.0	13.5	9.8	8.3
Some college	23.0	20.7	19.3	18.3	16.9
College graduate	21.9	29.7	32.6	37.4	36.7
Advanced degree	24.3	31.4	32.7	33.1	36.9
All					
Less than high school	20.2%	13.2%	11.0%	10.7%	9.0%
High school only	37.4	36.1	32.3	30.6	28.6
Some college	22.1	25.0	28.7	29.0	29.0
College graduate	11.5	15.1	18.6	19.9	21.8
Advanced degree	8.8	10.6	9.4	9.8	11.7

Note: Educational attainment is measured by determining what share of a given income group's total hours worked were worked by workers with a given education level.

Source: Authors' analysis of Current Population Survey Outgoing Rotation Group microdata

Figure 2U Change in real annual household capital income, by income group, 1979–2007



Note: Shaded areas denote recessions.

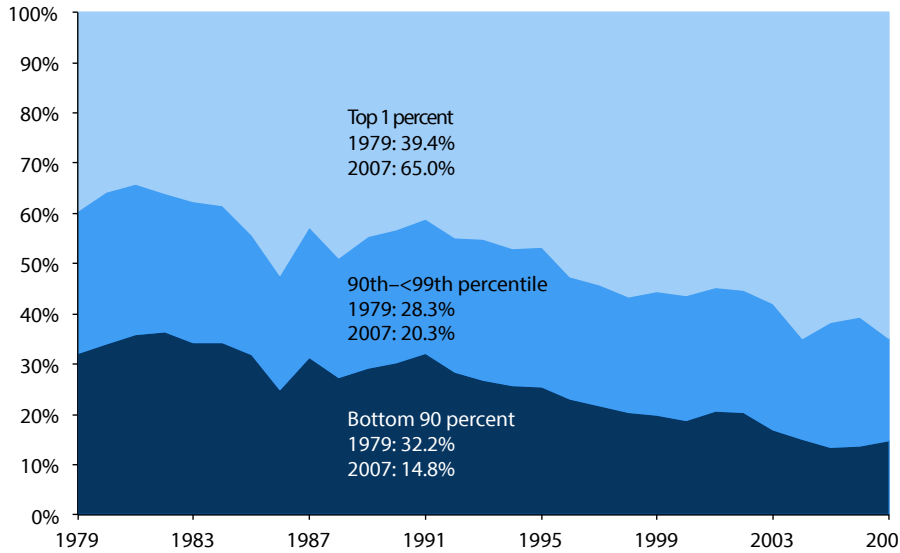
Source: Authors' analysis of Congressional Budget Office (2010a)

of the fourth fifth rose by only 8.3 percent, while average capital incomes of the bottom 60 percent of households actually fell.

Figure 2V shows the share of total capital income claimed by the top 1 percent, the 90th–<99th percentile, and the bottom 90 percent. In 1979, capital incomes were already substantially unequal—the top 1 percent of households claimed 39.4 percent of all capital income generated in the economy. However, by 2007 this share had ballooned to 65.0 percent. The share of capital income claimed by the remainder of the top 10 percent declined, from 28.3 percent to 20.3 percent over this period. However, the share of capital income claimed by the bottom 90 percent dropped the most. In 1979, the entire bottom 90 percent claimed less than a third (32.2 percent) of all capital income, and that fell to just 14.8 percent by 2007.

While the previous three figures have shown the generally recognized rising inequality of both labor earnings and capital income, **Table 2.10** documents the shift in aggregate income from labor to capital. As noted earlier, because the highest-income groups receive the bulk of capital income (increasingly so over the last 30 years), then a shift of total income toward more capital income and less labor income will exacerbate overall income inequality. This shift from labor to capital incomes between 1979 and 2007 is significant: The share of personal,

Figure 2V Share of total household capital income claimed, by income group, 1979–2007



Source: Authors' analysis of Congressional Budget Office (2010a)

Table 2.10 Share of market-based personal income, by income type, selected years, 1959–2010

	Share of income						
Income type	**1959**	**1973**	**1979**	**1989**	**2000**	**2007**	**2010**
Total capital income	13.3%	13.8%	15.0%	20.8%	19.3%	19.7%	18.7%
Rent	4.2	2.2	1.1	1.0	2.6	1.3	3.2
Dividends	3.3	2.8	2.9	3.6	4.6	7.1	6.5
Interest	5.8	8.8	11.0	16.3	12.0	11.3	9.1
Total labor income	73.6%	75.6%	75.8%	71.2%	70.7%	70.5%	71.9%
Wages and salaries	68.0	66.0	63.4	58.7	59.0	57.6	57.8
Fringe benefits	5.5	9.5	12.4	12.5	11.7	12.9	14.1
Proprietors' income*	13.2%	10.6%	9.2%	8.0%	10.0%	9.8%	9.4%
Total market-based personal income**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Realized capital gains***	1.64%	1.55%	1.4%	3.3%	7.7%	8.1%	2.4%

* Business and farmowners' income
** Total of listed income types
*** The fall in realized capital gains in 2010 is due to the economic impact of the 2007 recession.

Source: Authors' analysis of Bureau of Economic Analysis National Income and Product Accounts (Table 2.1), and Internal Revenue Service *SOI Tax Stats* (Table 1 and Historical Table 1)

market-based income accruing to capital owners rose from 15.0 to 19.7 percent during this time. This 4.7 percentage-point increase came mainly from a 5.3 percentage-point reduction in the share of overall income accounted for by wages and benefits of employees. Again, because capital income is much more concentrated than labor income (see Table 2.4) among high-income households, a shift from the latter to the former will, all else equal, tend to increase overall income inequality.

To highlight just how much this shift from labor to capital incomes between 1979 and 2007 affected trends in inequality, **Table 2.11** shows what would have happened had the share of total household income accounted for by capital (i.e., the "capital share") remained constant at the 1979 level over this time. First, note

Table 2.11 Effect of the shift from labor to capital income on the top 1 percent of households, selected years, 1979–2007 (2011 dollars)

Row		1979	1989	1995	2000	2007
1	Total capital income (billions)	$611,633	$965,322	$878,675	$1,593,798	$2,008,466
2	Top 1 percent capital income (billions)	$242,550	$433,743	$414,063	$902,701	$1,323,836
3	Top 1 percent's share of capital income	39.7%	44.9%	47.1%	56.6%	65.9%
4	Total household income (billions)	$5,139,775	$6,703,622	$7,446,395	$9,659,379	$11,220,480
5	Top 1 percent household income (billions)	$495,000	$857,200	$918,100	$1,706,430	$2,247,600
6	Top 1 percent's share of total household income	9.6%	12.8%	12.3%	17.7%	20.0%
7	Capital income as a share of total household income ("capital share")	11.9%	14.4%	11.8%	16.5%	17.9%
Counterfactual income, if 1979 capital share** (11.9%) **is held constant						
8	Counterfactual top 1 percent household income (billions)	$495,000	$794,265	$921,038	$1,499,045	$1,871,366
9	Counterfactual top 1 percent share of total household income	9.6%	11.8%	12.4%	15.5%	16.7%

Source: Authors' analysis of Congressional Budget Office (2010a)

that the overall income share of the top 1 percent of households rose from 9.6 percent to 20.0 percent—an increase of 10.4 percentage points—over this period (see row six in the table). Even allowing for the rise in the top 1 percent's share of capital income (row three), if the share of total household income accounted for by capital (row seven) had remained at its 1979 level instead of rising, the overall share of income claimed by the top 1 percent of households (row eight divided by row four) would have risen by only 7.0 percentage points—from about 9.6 percent to about 16.7 percent—rather than the actual 10.4 percentage-point increase (figures in the table are rounded to the nearest decimal place). Thus, the shift toward capital income accounted for roughly one-third (3.4 of 10.4 percentage points) of the increase in the total household income share claimed by the top 1 percent between 1979 and 2007.

The breakdown of income shares and the degree of tradeoff between capital and labor incomes shown in Table 2.11 is slightly complicated by categories such as proprietors' income, which can't be clearly defined as either labor or capital incomes. Thus, analysts often look at developments strictly within the corporate business sector to get a better sense of capital and labor income shares. All income in the corporate sector (which accounts for nearly 57 percent of the overall economy and 75 percent of the private economy) is classified strictly as either labor or capital incomes, so there is no ambiguity about which category is gaining or losing. **Table 2.12** documents the share of corporate-sector income accruing to capital owners versus to labor in recent decades. The table also conveys important information on not just capital's share of income but also profit rates and the capital-to-output ratio in the corporate sector.

An increase in the share of corporate income accruing to capital owners (the "capital share") can happen for one of two reasons—a rising capital-to-output ratio or a rising profit rate. The capital-to-output ratio is the value of the capital stock (physical capital used in production) in the corporate sector divided by total economic output in the sector. It is essentially a measure of how capital-intensive production is. If production becomes more capital-intensive over time (i.e., if the final cost of goods in the corporate sector reflects that proportionately more capital and less labor are used to produce the goods over time), then we should expect the share of capital incomes in the corporate sector to rise.

The profit rate is total capital income in the corporate sector divided by the value of the corporate capital stock. This is essentially the income generated per

Table 2.12 Corporate-sector income shares, profit rates, and capital-to-output ratio, selected years, 1959–2010

	Income share			Profit rate		Capital-to-output ratio
	Labor	Capital	Total	Pretax	Post-tax	
1959	77.5%	22.5%	100.0%	12.6%	6.9%	1.78
1969	79.1	20.9	100.0	13.0	7.8	1.61
1979	81.2	18.8	100.0	9.4	5.8	2.01
1989	80.0	20.0	100.0	10.8	7.8	1.85
1995	79.3	20.7	100.0	11.6	8.1	1.79
2000	81.2	18.8	100.0	11.0	7.8	1.71
2007	78.0	22.0	100.0	11.1	7.5	1.99
2010	73.8	26.2	100.0	13.3	9.6	1.97

Source: Authors' analysis of Bureau of Economic Analysis National Income and Product Accounts (Table 1.14) and Fixed Assets Accounts (Table 6.1)

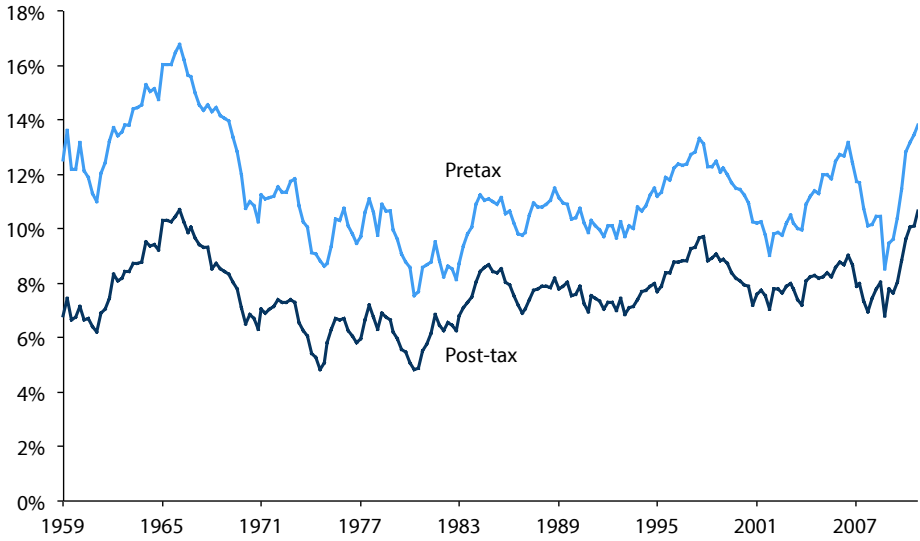
unit of capital for capital owners. If the profit rate rises, then capital owners can enjoy a stable (or even rising) share of total income even if the output of the corporate sector is no more capital-intensive than before.

This relationship is somewhat analogous to hours worked and the hourly wage rate. There are basically two ways for workers to earn more money: work longer hours or earn a higher wage per hour worked. One can think of the capital-to-output ratio as the "effort" put forth by capital owners, while the profit rate is the return to this effort.

Table 2.12 shows that between 1979 and 2007, corporate-sector production did not become more capital intensive—the capital-to-output ratio remained essentially the same, at 2.01, in 1979, as in 2007, at 1.99. Yet the capital share of total corporate income rose from 18.8 percent to 22.0 percent, reflecting a large rise in the pretax profit rate from 9.4 percent to 11.1 percent. It is also worth noting that as effective corporate tax rates fell between 1979 and 2007, the post-tax profit rate rose even further—from 5.8 percent to 7.5 percent.

The pretax and post-tax profit rates are shown visually in **Figure 2W**. In addition to their sharp upward jumps in the mid-1990s and 2000s, their levels at the end of 2010 are also remarkable. By the end of 2010, the post-tax profit rate reached its highest level since the 10.7 percent rate in 1966.

Figure 2W Pretax and post-tax profit rates, 1959–2010

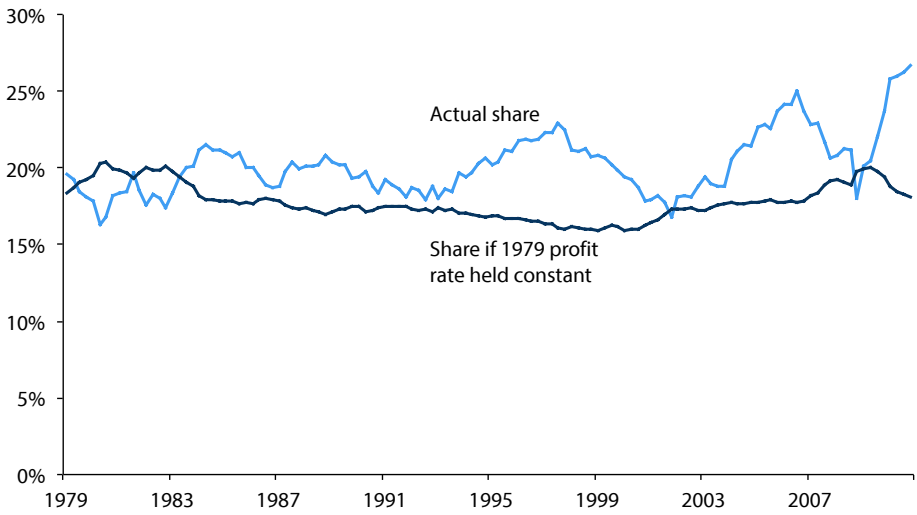


Source: Authors' analysis of data from Bureau of Economic Analysis National Income and Product Accounts, (Table 1.14) and Fixed Assets Accounts (Table 6.1)

Figure 2X demonstrates the influence of rising profit rates on the corporate income share accruing to capital owners. It shows the actual share of corporate income accounted for by capital and then shows what this share would have been had the 1979 profit rate held constant. In 2007, this difference was 3.4 percent of total corporate income (down from the peak difference of 6.5 percent in 2006, the year of peak profit rates). Corporate sector net value added was roughly $8.0 trillion in 2007; a 3.4 percent difference implies that roughly $270 billion went to capital owners rather than employees relative to a counterfactual with 1979 profit rates held constant. This is a substantial amount of money. If, for example, the corporate sector accounted for the same share of overall employment as it did for total economic output (57 percent in 2007), then this would imply that 78 million Americans were employed in the corporate sector in 2007. If this were the case, given that $270 billion could have gone to employee compensation had the profit rate in 2007 matched that of 1979, each of these employees could have had a roughly $3,400 raise that year (roughly 4.3 percent of average corporate-sector wages).

Finally, besides often being masked by a falling capital-to-output ratio, the shift between labor- and capital-derived shares of income is probably muffled by the fact that much of what is classified as labor income is actually tightly tied to movements in the price of capital assets. The most obvious example involves stock

Figure 2X Capital share of total corporate-sector income, actual and counterfactual holding 1979 profit rate constant, 1979–2010

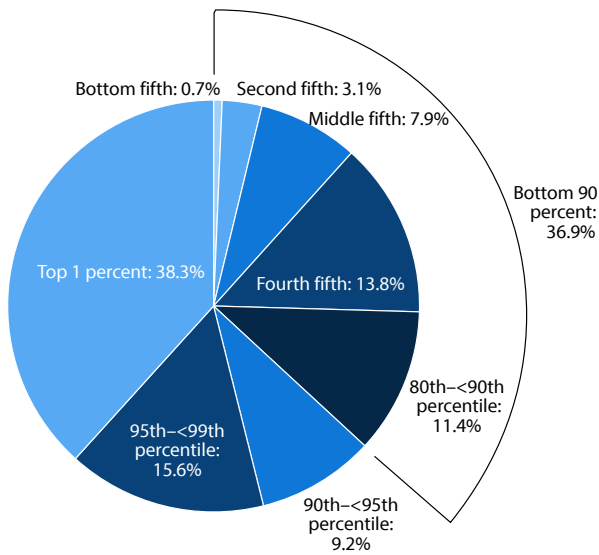


Source: Authors' analysis of data from Bureau of Economic Analysis National Income and Product Accounts (Table 1.14) and Fixed Assets Accounts (6.1)

options granted to CEOs and other highly paid wage and salary earners. When these options are exercised, the resulting income is classified as labor income, but the value of this income is directly dependent on valuation of the physical capital stock (through equity prices). These options tend to be granted to the highest-ranking managers of firms. All in all, they "look" much more like capital income than labor income—they rise and fall with the valuation of the physical capital stock, and they are even more concentrated among high-income households than the overall distribution of capital incomes. Freeman, Blasi, and Kruse (2009) estimate that in 2006 stock options accounted for about $65.1 billion in labor income that was probably better classified as capital income. Given that stock options were not nearly as large a component of managerial pay in the late 1970s, this increase almost surely means that any estimate of the shift from labor to capital incomes since then has been masked by the increasing, and quite likely inaccurate, classification of a large form of income payments (stock options) as labor income.

Figure 2Y provides a useful summary measure of the findings of this section on rising inequality, charting the shares of total income growth from 1979 to 2007 attributable to growth in the incomes of various subgroups. Between 1979 and

Figure 2Y Share of total household income growth attributable to various income groups, 1979–2007



Note: Data are for comprehensive income.

Source: Authors' analysis of Congressional Budget Office (2010a)

2007, average pretax income rose by 51.4 percent, according the CBO data on comprehensive income. Figure 2Y shows that rising incomes of the top 1 percent accounted for fully 38.3 percent of this total growth. Further, the top 1 percent of households accounted for a larger share of overall average income growth between 1979 and 2007 than the bottom 90 percent of households combined (who accounted for 36.9 percent of overall average income growth). The top 10 percent accounted for 63.1 percent of total growth. What this means is that a very small slice of the population (the top 1 percent) is claiming large-enough shares of total income growth to significantly affect how much is left over from everybody else.

How much did middle-income living standards actually rise between 1979 and 2007?

It is clear that the Great Recession dealt a tough blow to living standards across the household income distribution. What is much more contested is how much living standards of middle-income households rose in the 28 years preceding the Great Recession. Also crucially important to the public debate is a related question that we examine in some detail: To what degree have the increases in living standards of middle-income families been gained not because the overall economy performed well for this group, but because these households contributed more work hours to the paid labor force and upgraded their educational attainment? Income increases obtained by contributing more hours to the labor force or raising educational attainment have implicit ceilings. There are only so many hours in a week and so many degrees that can be earned. In contrast, income increases earned by economy-wide growth in wages per hour (reflecting overall productivity growth) do not have any obvious ceiling. The durability of income growth will be much greater if it stems from ever-increasing wages per hour. Unfortunately, that is not how incomes at the middle generally have been raised in recent decades.

The relevance of controlling for hours worked by middle-income households is obvious: Income increases obtained by working more hours do not necessarily translate into increases in living standards. Leisure has value. More specifically, economists tend to think the value of leisure is best approximated by the income foregone when leisure is "consumed," and this foregone income is simply a worker's earnings per unit of work. The value of an hour of leisure for a worker who commands $20 an hour when doing paid work is $20; and the decision to work another hour to earn this $20 is also a decision to give up an hour's worth of leisure that is worth $20. Choosing to work may also require paying for services household members provided when they were not in the paid labor force, such as child care, transportation, preparation of meals, etc.

The relevance of controlling for educational upgrading is perhaps less clear. But it seems fair to account for education upgrades when comparing measures of

middle-income households' economic performance to measures of overall economic growth (say, economy-wide productivity growth) to determine how much of the growth of middle-income households' living standards is purely exogenous to their own effort. In a well-functioning economy, when households invest time and money to increase their educational attainment, they should boost their own living standards as well as overall productivity growth.

In other words, when productivity is growing at all (which has indeed been true for the U.S. economy for more than a century), well-functioning capitalist economies ought to be able to generate growth in living standards even for a population that does not see substantial educational upgrading. But we know that the U.S. workforce has become substantially more educated in recent decades, which means that, all else equal (that is, even in a poorly performing economy), one should expect to see quite rapid increases in earnings and incomes of middle-income households.

This section provides a rough measure of how much of the increase in middle-income living standards derives from upgraded educational attainment rather than from share of overall productivity growth. We would argue that "credit" for the income increases obtained through rising educational attainment should be mostly given to the households themselves and not offered as evidence that the wider U.S. economy is doing a particularly good job in generating acceptable outcomes for middle-income households.

In our analysis of middle-income living standards we begin by defining how we measure living standards for middle-income households. Then we show the sources of income growth for middle-fifth families over selected years to determine how much income growth for this group is coming from market incomes versus other sources (government transfers, in particular) and to evaluate the future sustainability of these income gains given their sources. Next, we assess how much of the income gains resulting from market income growth were driven by increased effort on the part of households versus an increased return to that effort (i.e., inflation-adjusted hourly wage growth). In our discussion, "effort" pertains to both increased hours of work and to educational and experiential upgrading. Lastly, we use these trends to estimate the extent to which a well-functioning economy versus redistributive policies and increased household effort improved living standards for middle-income families.

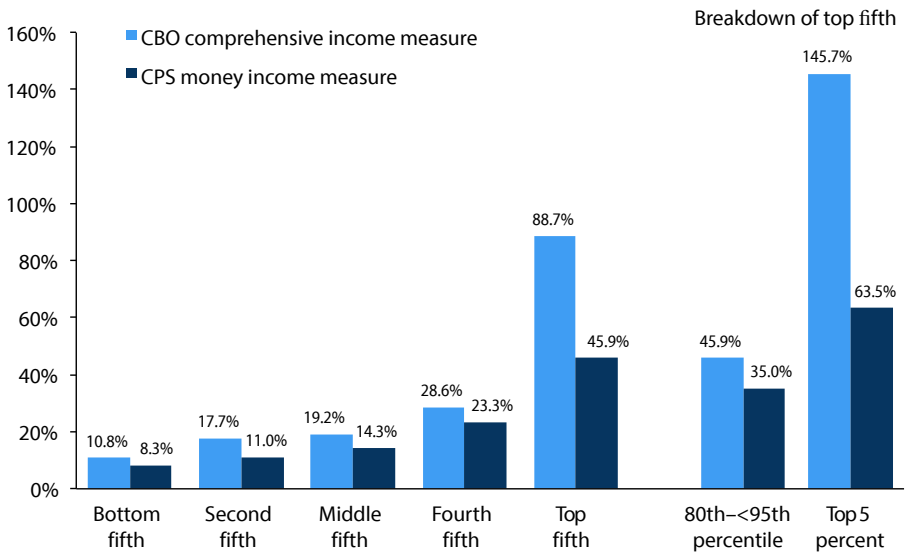
Measuring living standards at the middle

The term "middle class" is difficult to define with precision. For the purposes of this section we examine the average income of the middle fifth of the household income distribution. In 2007, this middle class income was $69,985, according to a dataset compiled by the CBO that measures comprehensive incomes. The remainder of this section will draw largely on this CBO dataset, the chief

advantage of which is that it measures many nonmoney components of income, the most important of which is health care benefits provided by public sources and employers, that are not tracked by the CPS annual survey's money income measures. Further, the CBO data track growth in realized capital gains, which have been a growing source of overall income, and one that is quite concentrated at the very top of the income distribution. The data go to 2007, which aligns with our examination of trends up to the Great Recession.

Figure 2Z demonstrates the differences in growth of average incomes using both the "money" or "comprehensive" definitions of income. The "money income" measure, which mirrors the "cash income" definition used by the Census Bureau in its annual Current Population Survey report on income, poverty, and health insurance coverage, likely is the most-cited measure of living standards at the middle of the income distribution. However, in recent years a number of "revisionist" studies have been released arguing that the economic trajectory of the American middle class has been much more positive than the CPS cash income series implies. We use the CBO comprehensive income data in much of the rest of this section in large part to assess the worth of this revisionist literature.

Figure 2Z Change in household income, as reported by CBO comprehensive income data and CPS money income data, by income group, 1979–2007



Source: Authors' analysis of Congressional Budget Office (2010a) and Current Population Survey Annual Social and Economic Supplement, *Historical Income Tables* (Table F-3)

It is true that the comprehensive-income data (which, as described previously in this chapter, include many sources of income excluded in the money income definition) show substantially faster growth than the money-income data across the entire income distribution. Average household money income for the middle fifth rose 14.3 percent between 1979 and 2007, while average household comprehensive income for this group rose 19.2 percent (from $58,700 to $69,985). For this fifth, this difference is largely explained by the rising share of noncash transfers and employee benefits in overall average incomes of the middle fifth. The much larger increase in comprehensive income for the top 5 percent of households (which rose from $269,956 to $663,172, or 145.7 percent compared with a 63.5 percent increase in money income) is largely driven by the CBO dataset's inclusion of the value of realized capital gains.

Sources of income for the middle fifth

Table 2.13 draws upon CBO comprehensive income data to show the sources of income for the middle fifth of the household income distribution for selected years. Unsurprisingly, wages (including imputed taxes, which for the middle fifth are dominated by payroll taxes, which are directly determined by underlying wages and assumed by the CBO to directly boost pretax income levels) make up the largest share of income for this group—accounting for $45,315 of its total $58,751 in income (in 2011 dollars) for 1979, or about 77 percent. However, the share of comprehensive income accounted for by wages has fallen over time—by 2007 wages accounted for $45,997 of $69,949 in comprehensive income, or about 66 percent. (The dollar values shown in the table are from unrounded CBO data, and thus differ slightly from those underlying Figure 2Z, which are from rounded CBO data.)

This table also charts the changes in various income sources over time. Over the entire 1979–2007 period, total average wages of the middle fifth rose only $682, or an average 0.1 percent growth each year over this period. (Recall that increases in household wages result from changes in three factors: the number of workers in the household; annual hours employed household members work, based on changes in weekly hours or weeks worked per year; and the inflation-adjusted hourly wage of employed workers.)

This growth in total household wages explains only 6.1 percent of the $11,198 increase in comprehensive income between 1979 and 2007. Capital-based incomes actually fell for the middle fifth over this period, dropping by a cumulative $455.

The bulk of the total increase in comprehensive income between 1979 and 2007 can be explained by growth in pension income, cash transfers, and in-kind income. Pension income refers to income currently received by retirees for past service (not employers' current payments into plans for incumbent workers, as they are sometimes classified in other data sources, such as the National Income

Table 2.13 Change in sources of comprehensive income, middle fifth of households, selected years, 1979–2007 (2011 dollars)

						In-kind income				
						CPI-U-RS deflator*			CPI-MC*	
	Income	Wages and imputed taxes	Capital income	Pensions and other income	Cash transfers	Employer-sponsored insurance	Medicare and Medicaid	Other in-kind	Employer-sponsored insurance	Medicare and Medicaid
1979	$58,751	$45,315	$4,114	$2,247	$3,942	$2,163	$817	$154	$2,163	$817
1989	59,724	41,605	5,198	3,692	5,058	2,358	1,722	90	1,757	1,283
1995	61,334	40,936	3,785	4,642	5,992	2,976	2,843	160	1,795	1,715
2000	65,637	43,654	4,347	5,667	6,034	2,568	3,242	125	1,470	1,855
2007	69,949	45,997	3,658	5,820	6,739	3,558	4,050	126	1,821	2,073
Share of income										
1979	100.0%	77.1%	7.0%	3.8%	6.7%	3.7%	1.4%	0.3%	3.7%	1.4%
1989	100.0	69.7	8.7	6.2	8.5	3.9	2.9	0.2	3.0	2.2
1995	100.0	66.7	6.2	7.6	9.8	4.9	4.6	0.3	3.0	2.9
2000	100.0	66.5	6.6	8.6	9.2	3.9	4.9	0.2	2.3	2.9
2007	100.0	65.8	5.2	8.3	9.6	5.1	5.8	0.2	2.7	3.1
Average annual change										
1979–1989	0.2%	-0.9%	2.4%	5.1%	2.5%	0.9%	7.7%	-5.2%	-2.1%	4.6%
1989–1995	0.4	-0.3	-5.2	3.9	2.9	4.0	8.7	10.1	0.4	5.0
1995–2000	1.4	1.3	2.8	4.1	0.1	-2.9	2.7	-4.7	-3.9	1.6
2000–2007	0.9	0.7	-2.4	0.4	1.6	4.8	3.2	0.1	3.1	1.6
1979–2007	0.6	0.1	-0.4	3.5	1.9	1.8	5.9	-0.7	-0.6	3.4

	Income	Wages and imputed taxes	Capital income	Pensions and other income	Cash transfers	In-kind income				
						CPI-U-RS deflator*			CPI-MC*	
						Employer-sponsored insurance	Medicare and Medicaid	Other in-kind	Employer-sponsored insurance	Medicare and Medicaid
Total change in 2011 dollars										
1979–1989	$972	-$3,709	$1,085	$1,446	$1,116	$195	$905	-$64	-$406	$466
1989–1995	1,610	-669	-1,414	950	934	618	1,122	70	37	432
1995–2000	4,303	2,718	562	1,024	42	-407	399	-35	-325	140
2000–2007	4,312	2,344	-688	153	705	989	808	1	351	218
1979–2007	11,198	682	-455	3,573	2,797	1,395	3,233	-28	-342	1,256
Share of total change										
1979–1989	100.0%	-381.5%	111.5%	148.6%	114.8%	20.0%	93.0%	-6.6%	-41.7%	47.9%
1989–1995	100.0	-41.6	-87.8	59.0	58.0	38.4	69.6	4.4	2.3	26.8
1995–2000	100.0	63.2	13.1	23.8	1.0	-9.5	9.3	-0.8	-7.6	3.3
2000–2007	100.0	54.4	-16.0	3.6	16.3	22.9	18.7	0.0	8.1	5.0
1979–2007	100.0	6.1	-4.1	31.9	25.0	12.5	28.9	-0.2	-3.1	11.2

* The last two columns deflate health care contributions by a medical care price deflator that accounts for faster growth in health care costs relative to other consumer goods.

Source: Authors' analysis of data from the Congressional Budget Office (2010a and 2010b)

and Product Accounts). As such, today's pension income accruing to the middle fifth largely reflects the past extent of pension coverage for this group. Cash transfers include items such as payments from unemployment insurance, veterans' benefits, and, as the largest category, Social Security payments. In-kind income is dominated by Medicaid, Medicare, and employer payments for ESI premiums.

Income growth for the middle fifth has been driven largely by elderly households' pension and transfer income

There is a common theme among these large sources of income growth for the middle fifth: They are payments heavily weighted towards older (and often retired) households. The share of elderly households in the middle fifth increased from 15.2 percent to 22.1 percent over this period, so it is not surprising that income flows directed disproportionately toward these households seemingly accounted for a large share of overall income growth in the middle.

But the share of total growth accounted for by these income categories (85.6 percent) is so large that it seems unlikely that the rising share of elderly households in the middle fifth is the only trend driving this dynamic. To get a sense of how much of overall income growth from 1979 to 2007 was driven by these income categories, note that growth in pension income ($3,573), cash transfers ($2,797), and in-kind income ($3,205) (in-kind income was mostly from government transfers such as Medicare and Medicaid, which totaled $3,233, and excluded employer payments for health insurance premiums for reasons discussed in the following section) all together account for $9,575, which is 85.5 percent of the total $11,198 increase in comprehensive income. Although some cash transfers are not directly targeted at older households, it seems safe to say that the growth in cash transfers over the 1979 to 2007 period was dominated by Social Security. Further, excluding employer contributions for health insurance premiums actually cuts out some income received by older households for retiree health insurance. All in all, these numbers point to a strong case that the large majority of the increase in middle fifth incomes was a function of pensions and government transfers directed toward elderly households.

Adjusting income for the truer contribution of health care transfers

With the exception of pension income, which is largely derived from past market activity, market incomes contributed comparatively little to income growth for the middle fifth of households. After pensions, the second-largest source of growth of market-based income (all data columns except cash transfers and in-kind income from government sources) for the middle fifth is the growth of employer contributions for health insurance premiums. Growth in this component

of compensation lifted overall comprehensive income of the middle fifth by $1,395 between 1979 and 2007, 12.5 percent of the total increase.

Although these large increases in health-insurance-premium contributions cost employers real money, they are not clear evidence that the broader economy is working well for middle-income families because the contributions do not necessarily buy substantially higher living standards for these families. To gauge how much these premium contributions affect overall inflation-adjusted living standards, the CBO deflates the contributions (as well as other components of in-kind income that are related to health care) with the same overall price deflator applied to other income sources. Because the inflation measure behind the deflator—the consumer price index for urban consumers, research series (CPI-U-RS)—does not adequately reflect increases in health care costs, the CBO data likely overstates living standards growth. The CPI-U-RS (used by the authors in most sections of this book and by the CBO in their comprehensive income measures) does not even include employer contributions for health insurance premiums in the "basket" of goods that it tracks over time for price increases; only out-of-pocket health care costs are included in this basket. But because "income" via employer-sponsored health care premiums can only be used to purchase health care, it seems to us more appropriate to deflate it by a medical-care-specific price deflator.

This is especially important given that health care prices have grown far faster (by a factor of nearly 3-to-1) than prices of other consumer goods and services. The last two columns in Table 2.13 show the value of employer and government health benefits received by the middle fifth deflated using the medical care price deflator, the CPI-Medical Care (CPI-MC) from the Bureau of Labor Statistics rather than the overall CPI-U-RS used in the preceding columns. This adjusted method indicates that the value of health care benefits that the middle fifth received from employers actually declined from 1979 to 2007.

Although changing the deflator for employer-sponsored health care premiums seems like a relatively technical change to a small share of overall income, it actually results in a -$1,737 swing in comprehensive income growth between 1979 and 2007 (the difference between the $1,395 gain when deflated by the overall CPI-U-RS into a $342 decline when deflated with the CPI-MC). This adjustment effectively erases 15.5 percent of the entire rise in comprehensive income over that period.

Further, applying the same medical care deflator to the value of Medicaid and Medicare payments reduces growth of in-kind income going to the middle fifth by a further $1,977 (the difference between the $3,233 gain when using the CPI-U-RS deflator and the $1,256 gain using the CPI-MC). In all, deflating medical-related in-kind income by medical-specific price deflators erases $3,714 ($1,737 in ESI contributions plus $1,977 in Medicare and Medicaid payments) or about one-third of the $11,198 total gain in comprehensive income between 1979 and 2007.

Well-informed analysts have expressed doubt that the CPI-MC (and other medical care price deflators that show similar trends) fully captures underlying growth in the value of medical services provided in today's economy relative to decades past—in short, suggesting that the deflators show too large an increase in prices because they don't reflect that quality is improving. It is true that most medical-care deflators in essence show no inflation-adjusted increase in the value of medical care consumed in the United States between 1979 and 2007, even while a growing share of the overall economy is spent in this sector. But even if medical deflators cause too much of a "correction"—even if medical consumers are getting some increased value for their increased dollars spent (indeed it would be strange to think that today's workers would happily accept the medical care and technologies available only in 1979 as a perfect substitute for what they receive today), the value has clearly not kept pace with rapid health care price inflation.

To make the point polemically, health care wise, the U.S. economy is performing quite poorly, both for workers and employers. While U.S. workers might be unwilling to trade today's U.S. health care for 1979-vintage U.S. health care, they probably would happily accept 2010-vintage health care delivered in, say, France, as a perfect substitute (or even, if the World Health Organization's 2010 rankings are to be believed, a substantial improvement). And this French health care bundle was available at less than half the price of the U.S. health care bundle (OECD 2011).

In short, the CBO data, which show that government health care transfers (Medicare and Medicaid) and employer contributions to health care premiums contributed 41.4 percent to overall income growth of the middle fifth, likely significantly overstate these health care contributions. Adjusting government- and employer-sponsored health care benefits to account for higher inflation of health care prices relative to prices of other consumer goods shows that comprehensive income of the middle fifth of U.S. households grew 12.7 percent from 1979 to 2007, not 19.1 percent.

Disproportionate growth of transfers directed toward elderly households

The next two tables confirm the disproportionate growth of transfers directed toward elderly households suggested by Table 2.13. **Table 2.14** shows the sources of income for the middle fifth of "elderly households," households headed by persons age 65 and older. While average annual income of elderly households in the middle fifth rose by a cumulative $12,696 between 1979 and 2007 (from $45,839 to $58,535), average annual wages fell by $3,439, and capital incomes fell by $4,697. However, these declines were overwhelmingly offset by a $7,153 increase in pension income, a $5,413 increase in cash transfers (surely dominated by Social Security payments), and an $8,265 increase in in-kind income (dominated

Table 2.14 Change in sources of comprehensive income for elderly households in the middle fifth, selected years, 1979–2007 (2011 dollars)

	Income	Wages and imputed taxes	Capital income	Pensions and other income	Cash transfers	In-kind income
1979	$45,839	$12,517	$9,244	$6,192	$13,836	$4,049
1989	48,653	7,839	9,660	8,400	15,922	6,832
1995	50,616	8,400	5,902	10,467	16,679	9,168
2000	54,469	8,454	6,822	13,078	16,331	9,784
2007	58,535	9,079	4,548	13,345	19,250	12,314
Average annual change						
1979–1989	0.6%	-4.6%	0.4%	3.1%	1.4%	5.4%
1989–1995	0.7	1.2	-7.9	3.7	0.8	5.0
1995–2000	1.5	0.1	2.9	4.6	-0.4	1.3
2000–2007	1.0	1.0	-5.6	0.3	2.4	3.3
1979–2007	0.9	-1.1	-2.5	2.8	1.2	4.1
Total change						
1979–1989	$2,814	-$4,679	$415	$2,208	$2,086	$2,783
1989–1995	1,963	562	-3,758	2,067	757	2,336
1995–2000	3,853	54	921	2,611	-348	616
2000–2007	4,067	625	-2,274	267	2,919	2,531
1979–2007	12,696	-3,439	-4,697	7,153	5,413	8,265
Share of total change						
1979–1989	100.0%	-166.3%	14.8%	78.5%	74.1%	98.9%
1989–1995	100.0	28.6	-191.4	105.3	38.6	119.0
1995–2000	100.0	1.4	23.9	67.8	-9.0	16.0
2000–2007	100.0	15.4	-55.9	6.6	71.8	62.2
1979–2007	100.0	-27.1	-37.0	56.3	42.6	65.1

Note: Elderly households are age 65 and older.

Source: Authors' analysis of Congressional Budget Office (2010c)

by Medicaid and Medicare benefits). These findings support our conclusion that transfer payments and pension increases specifically accruing to elderly households played a major role in supporting middle-fifth incomes.

Table 2.15 undertakes the same analysis for non-elderly households. Even for this group, which should be much more dependent on labor earnings, wages accounted for less than half ($5,311) of the overall $12,133 increase in comprehensive income between 1979 ($61,062) and 2007 ($73,194). Somewhat surprisingly, the increase in pension income, $2,140, accounted for nearly a fifth of the total increase in income for non-elderly households in the middle fifth. If we assign the full value of employer contributions for health insurance premiums to this non-elderly group (which would, admittedly, be a small overstatement), then employer contributions for ESI added $2,019 to overall income between 1979 and 2007.

Table 2.16 combines the data from the previous three tables with data on the share of total households in the middle fifth that are elderly to show the shares of overall income growth of the middle fifth of the income distribution contributed by various household types and income sources. This allows us to examine how much of the growth of middle-fifth incomes was due to particular types of households (e.g., elderly versus non-elderly) and types of income (e.g., wages versus pensions versus cash transfers). To make the results fully comparable with others, we used the CPI-U-RS to deflate health benefits and transfers.

Reading down the first column in Table 2.16, we can see that average comprehensive income of the middle fifth in 1979 was $58,751. Of this, $6,958 was "contributed" by elderly households (computed by multiplying average elderly household income in 1979, $45,839, by the share of middle-fifth households that were elderly, 15.2 percent). The rest of the $58,751 was contributed by non-elderly households.

Reading down to the next block of rows, we can see that wages and imputed taxes overall contributed $45,315 to overall income of $58,751 in 1979. Of this contribution from wages, $1,900 came from elderly households while $43,415 came from non-elderly households.

In data columns 6 through 10, we track the change for each income type by household type for various time periods. In the last column, we show how much each household/income-type contributed to overall income growth for the middle fifth of households between 1979 and 2007. Probably the most striking finding is that annual wage earnings from non-elderly households contributed only $572, or 5.1 percent, of the $11,198 increase in overall middle-fifth incomes. Given that wages (including imputed taxes) constituted 65.8 percent of overall incomes of the middle fifth, this small share suggests that the lackluster performance of wages of non-elderly households bodes ill for future income growth.

As in Table 2.13, the last column in this table shows that pensions, cash transfers and in-kind income (minus employer-sponsored insurance) accounted

Table 2.15 Change in sources of comprehensive income for non-elderly households in the middle fifth, selected years, 1979–2007 (2011 dollars)

	Income	Wages and imputed taxes	Capital income	Pensions and other income	Cash transfers	Employer-sponsored insurance	In-kind income*
1979	$61,062	$51,184	$3,196	$1,541	$2,172	$2,550	$420
1989	62,785	50,941	3,965	2,391	2,055	3,010	424
1995	64,720	51,213	3,116	2,803	2,617	3,915	1,056
2000	69,495	55,813	3,491	3,106	2,477	3,456	1,151
2007	73,194	56,495	3,405	3,680	3,182	4,569	1,863
Average annual change							
1979–1989	0.3%	0.0%	2.2%	4.5%	-0.6%	1.7%	0.1%
1989–1995	0.5	0.1	-3.9	2.7	4.1	4.5	16.4
1995–2000	1.4	1.7	2.3	2.1	-1.1	-2.5	1.7
2000–2007	0.7	0.2	-0.4	2.5	3.6	4.1	7.1
1979–2007	0.6	0.4	0.2	3.2	1.4	2.1	5.5
Total change							
1979–1989	$1,723	-$243	$769	$850	-$117	$460	$4
1989–1995	1,935	271	-849	412	562	906	633
1995–2000	4,775	4,601	375	304	-140	-460	95
2000–2007	3,699	681	-86	574	705	1,114	711
1979–2007	12,133	5,311	210	2,140	1,010	2,019	1,443
Share of total change							
1979–1989	100.0%	-14.1%	44.6%	49.3%	-6.8%	26.7%	0.2%
1989–1995	100.0	14.0	-43.9	21.3	29.1	46.8	32.7
1995–2000	100.0	96.3	7.9	6.4	-2.9	-9.6	2.0
2000–2007	100.0	18.4	-2.3	15.5	19.1	30.1	19.2
1979–2007	100.0	43.8	1.7	17.6	8.3	16.6	11.9

* In-kind income does not include employer-sponsored insurance.

Source: Authors' analysis of Congressional Budget Office (2010c)

Table 2.16 Contributions to middle-fifth income growth, by income category and household type, selected years, 1979–2007 (2011 dollars)

						Change					
	1979	1989	1995	2000	2007	1979–1989	1989–1995	1995–2000	2000–2007	1979–2007	Share of 1979–2007 income change
Share of total households											
Elderly	15.2%	21.7%	24.0%	25.7%	22.1%	6.5	2.3	1.7	-3.5	7.0	
Non-elderly with kids	49.2	39.8	38.2	35.6	34.1	-9.4	-1.6	-2.6	-1.5	-15.1	
Non-elderly without kids	35.6	38.5	37.8	38.7	43.7	2.9	-0.8	0.9	5.0	8.1	
All non-elderly	84.8	78.3	76.0	74.3	77.9	-6.5	-2.3	-1.7	3.5	-7.0	
Average comprehensive income	$58,751	$59,724	$61,334	$65,637	$69,949	$972	$1,610	$4,303	$4,312	$11,198	100.0%
Elderly	6,958	10,538	12,150	13,985	12,959	3,580	1,612	1,835	-1,026	6,001	53.6
Non-elderly with kids	35,088	29,895	29,638	29,959	30,674	-5,193	-258	321	715	-4,414	-39.4
Non-elderly without kids	16,706	19,290	19,547	21,693	26,316	2,585	256	2,146	4,623	9,611	85.8
All non-elderly	51,794	49,186	49,184	51,652	56,990	-2,608	-1	2,468	5,338	5,196	46.4
Wages and imputed taxes	$45,315	$41,605	$40,936	$43,654	$45,997	-$3,709	-$669	$2,718	$2,344	$682	6.1%
Elderly	1,900	1,698	2,016	2,171	2,010	-202	319	154	-161	110	1.0
Non-elderly with kids	29,942	24,904	23,876	24,432	24,146	-5,038	-1,028	556	-286	-5,796	-51.8
Non-elderly without kids	13,473	15,004	15,044	17,051	19,842	1,531	40	2,007	2,791	6,369	56.9
All non-elderly	43,415	39,908	38,920	41,483	43,988	-3,507	-988	2,563	2,504	572	5.1
Capital incomes	$4,114	$5,198	$3,785	$4,347	$3,658	$1,085	-$1,414	$562	-$688	-$455	-4.1%
Elderly	1,403	2,092	1,417	1,752	1,007	689	-676	335	-745	-396	-3.5
Non-elderly with kids	1,711	1,702	1,363	1,481	1,561	-9	-339	118	80	-150	-1.3
Non-elderly without kids	1,000	1,404	1,005	1,114	1,090	404	-399	109	-23	90	0.8
All non-elderly	2,711	3,106	2,368	2,595	2,651	395	-738	227	56	-59	-0.5

						Change					
	1979	1989	1995	2000	2007	1979–1989	1989–1995	1995–2000	2000–2007	1979–2007	Share of 1979–2007 income change
Pensions and other income	$2,247	$3,692	$4,642	$5,667	$5,820	$1,446	$950	$1,024	$153	$3,573	31.9%
Elderly	940	1,819	2,513	3,358	2,954	880	693	845	-403	2,015	18.0
Non-elderly with kids	717	843	1,052	1,143	1,290	126	209	90	147	572	5.1
Non-elderly without kids	589	1,030	1,078	1,166	1,576	440	48	88	410	987	8.8
All non-elderly	1,307	1,873	2,130	2,309	2,866	566	257	179	557	1,559	13.9
Cash transfers	$3,942	$5,058	$5,992	$6,034	$6,739	$1,116	$934	$42	$705	$2,797	25.0%
Elderly	2,100	3,449	4,004	4,193	4,262	1,349	555	189	69	2,161	19.3
Non-elderly with kids	993	779	947	819	865	-214	168	-128	45	-128	-1.1
Non-elderly without kids	849	830	1,042	1,022	1,613	-19	211	-20	591	764	6.8
All non-elderly	1,842	1,610	1,989	1,841	2,478	-232	379	-148	636	636	5.7
***Employer-sponsored insurance** (ESI)*	$2,163	$2,358	$2,976	$2,568	$3,558	$195	$618	-$407	$989	$1,395	12.5%
Elderly	—	—	—	—	—	—	—	—	—	—	—
Non-elderly with kids	—	—	—	—	—	—	—	—	—	—	—
Non-elderly without kids	—	—	—	—	—	—	—	—	—	—	—
All non-elderly	—	—	—	—	—	—	—	—	—	—	—
In-kind income minus ESI	$971	$1,812	$3,003	$3,368	$4,176	$841	$1,192	$364	$809	$3,206	28.6%
Elderly	615	1,480	2,201	2,512	2,726	865	721	311	214	2,112	18.9
Non-elderly with kids	1,725	1,667	2,400	2,084	2,813	-58	733	-316	729	1,088	9.7
Non-elderly without kids	794	1,022	1,378	1,340	2,195	228	356	-39	855	1,401	12.5
All non-elderly	2,519	2,690	3,778	3,424	5,008	170	1,088	-354	1,584	2,489	22.2

Source: Authors' analysis of Congressional Budget Office (2010c)

for 85.5 percent of overall income growth. Perhaps even more striking, however, is that pensions, cash transfers, and in-kind transfers minus ESI directed exclusively at elderly households accounted for 56.2 percent of overall income growth (18.0 percent from pensions, 19.3 percent from cash transfers, and 18.9 percent from in-kind transfers).

In short, this table suggests that labor-market-driven outcomes have not been an important contributor to the rise in incomes reported by CBO for the middle fifth of households in the income distribution from 1979 to 2007. The relative insignificance of wages on income growth is especially apparent when we account for inflation in medical care by deflating the gains from employer-provided health coverage and government-provided medical services. As discussed earlier, a correction for this reduces overall income growth for the middle fifth from 19.1 percent to 12.7 percent.

The role of hours worked and educational upgrading in wage growth

Although wages have made a relatively small contribution to wage growth for the middle fifth of households in the income distribution, wages still constitute by far the largest portion of middle-fifth household incomes. (Table 2.13 cites wages' 2007 share of comprehensive income as 65.8 percent, which includes 5.3 percent in "imputed taxes" that are largely employer-side payroll taxes based on their labor earnings). Further, annual labor earnings made such a small contribution to comprehensive income growth from 1979 to 2007 partially because non-elderly households shrank as a share of all households in the middle fifth over the period. Table 2.15 showed that annual wages of working-age households increased $5,311 from 1979 to 2007. Thus, determining how much of the gain in this crucial income category was a function of increased work effort rather than higher earnings per unit of work is key to assessing actual living-standards growth and projecting how well labor-market-derived incomes are likely to boost non-elderly middle-income households in coming years.

The next part of this section looks at how much of the overall increase in annual earnings of the middle fifth is driven by working more hours and upgrading education and experience. Such earnings gains attest to the ingenuity and tenacity of American households in striving for living-standards growth, and do not serve as strong evidence that the economy has been performing satisfactorily. In our view, gains achieved simply by working more are a gain in income, but a decline in leisure, which has at best an ambiguous effect on living standards.

To undertake this examination, we switch back to the CPS microdata, because the CBO data do not provide information on hours worked, educational attainment, or experience. **Table 2.17** shows, for groups across the money income (not comprehensive income) distribution, how much of the increase in annual wages of

Table 2.17 Contribution of hours versus hourly wages to annual wage growth for working-age households, by income group, selected years, 1979–2007 (2011 dollars) *Part 1 of 2*

						Change				
	1979	1989	1995	2000	2007	1979–1989	1989–1995	1995–2000	2000–2007	1979–2007
Real average annual wages										
All	$59,723	$65,858	$70,210	$78,883	$78,768	9.8%	6.4%	11.6%	-0.1%	27.7%
Bottom fifth	14,596	14,855	14,346	17,090	16,507	1.8	-3.5	17.5	-3.5	12.3
Second fifth	32,792	33,773	32,700	36,817	35,980	2.9	-3.2	11.9	-2.3	9.3
Middle fifth	49,260	51,729	50,561	56,335	55,560	4.9	-2.3	10.8	-1.4	12.0
Fourth fifth	66,410	71,972	72,651	80,791	81,220	8.0	0.9	10.6	0.5	20.1
80th–<95th percentile	91,395	103,913	107,185	120,541	123,076	12.8	3.1	11.7	2.1	29.8
Top 5 percent	128,656	159,249	219,365	264,547	254,701	21.3	32.0	18.7	-3.8	68.3
Annual hours worked										
All	3,092	3,286	3,317	3,378	3,314	6.1%	0.9%	1.8%	-1.9%	6.9%
Bottom fifth	1,716	1,884	1,837	1,977	1,880	9.4	-2.5	7.4	-5.0	9.2
Second fifth	2,543	2,797	2,811	2,908	2,787	9.5	0.5	3.4	-4.2	9.2
Middle fifth	3,007	3,273	3,323	3,395	3,335	8.5	1.5	2.2	-1.8	10.3
Fourth fifth	3,424	3,604	3,688	3,774	3,719	5.1	2.3	2.3	-1.5	8.3
80th–<95th percentile	3,816	3,976	4,005	4,035	3,997	4.1	0.7	0.7	-0.9	4.6
Top 5 percent	3,939	4,069	4,057	3,984	4,013	3.2	-0.3	-1.8	0.7	1.9
Real average hourly wages										
All	$19.32	$20.04	$21.17	$23.35	$23.77	3.7%	5.5%	9.8%	1.8%	20.8%
Bottom fifth	8.51	7.88	7.81	8.64	8.78	-7.6	-0.9	10.1	1.6	3.2
Second fifth	12.90	12.07	11.63	12.66	12.91	-6.6	-3.7	8.5	1.9	0.1

Table 2.17 Contribution of hours versus hourly wages to annual wage growth for working-age households, by income group, selected years, 1979–2007 (2011 dollars) *Part 2 of 2*

						Change				
	1979	1989	1995	2000	2007	1979–1989	1989–1995	1995–2000	2000–2007	1979–2007
Middle fifth	$16.38	$15.81	$15.22	$16.59	$16.66	-3.6%	-3.8%	8.7%	0.4%	1.7%
Fourth fifth	19.40	19.97	19.70	21.41	21.84	2.9	-1.4	8.3	2.0	11.8
80th–<95th percentile	23.95	26.14	26.76	29.87	30.79	8.7	2.4	11.0	3.0	25.1
Top 5 percent	32.66	39.14	54.07	66.40	63.47	18.1	32.3	20.5	-4.5	66.4
Contributions to annual wage growth										
Hours worked										
All						62.3%	14.5%	15.8%	1321.3%	25.0%
Bottom fifth						531.5	73.0	42.2	145.4	74.4
Second fifth						323.8	-15.4	28.6	184.7	99.0
Middle fifth						173.0	-66.2	20.0	130.1	85.9
Fourth fifth						63.9	245.3	21.7	-276.5	41.1
80th–<95th percentile						31.9	23.7	6.3	-45.0	15.6
Top 5 percent						15.2	-0.9	-9.7	-19.0	2.7
Hourly wages										
All						37.7%	85.5%	84.2%	-1221.3%	75.0%
Bottom fifth						-431.5	27.0	57.8	-45.4	25.6
Second fifth						-223.8	115.4	71.4	-84.7	1.0
Middle fifth						-73.0	166.2	80.0	-30.1	14.1
Fourth fifth						36.1	-145.3	78.3	376.5	58.9
80th–<95th percentile						68.1	76.3	93.7	145.0	84.4
Top 5 percent						84.8	100.9	109.7	119.0	97.3

Note: Income groups refer to working-age households in various sections of the income distribution as measured by money income. Percentage changes are approximated by taking the difference of natural logs of wages and hours.

Source: Authors' analysis of the Current Population Survey Annual Social and Economic Supplement microdata

working households is attributable to higher hourly pay versus how much is attributable to more hours worked throughout the year (which would include changes in the work status or work schedules of household members).

While there are many compelling findings in this table, we focus on trends for the middle fifth of households. Between 1979 and 2007, annual wages of the middle fifth increased 12.0 percent (from $49,260 to $55,560) (note that the increases and shares differ from Table 2.13 because these are different data sources and income concepts; see table notes). However, average annual hours worked rose by 10.3 percent (from 3,007 to 3,335), while average hourly wages rose by 1.7 percent (from $16.38 to $16.66); therefore, 85.9 percent of the rise in annual wages of the middle fifth was driven by increased work time.

Another striking finding of this table is that annual hours worked by the top 5 percent of households grew by only 1.9 percent over this period. Contrary to many claims that rising inequality is largely a function of workaholism among high-earners, all else equal, changes in work hours would have actually *reduced* inequality over the 1979 to 2007 period.

Another interesting finding from the table is further evidence that the labor market of the late 1990s was particularly favorable for workers across the board. Hourly earnings rose faster for more income groups between 1995 and 2000 than in any other subperiod within the 1979–2007 period. For the bottom four fifths, the vast majority of their earnings growth from 1979 to 2007 occurred in the late 1990s.

Table 2.18 takes a closer look at annual hours worked of a specific type of household: prime-age married couples (both spouses between age 25 and 54) with children. As with Table 2.17, we need to use CPS microdata to examine trends for this group, and we will focus the discussion here on households in the middle fifth of the money income distribution. From 1979 to 2007, there was little variance in the hours worked by men in this group, who tend to work more than full time, full year (they worked 2,200 hours in 2007, versus 52 weeks at 40 hours per week, or 2,080 hours), and thus there is little room for them to expand work hours. (This is known as a "ceiling effect," since annual hours are constrained by the available time in the day.) Women in this group, on the other hand, logged marked increases in annual hours worked, particularly over the 1980s. Between 1979 and 2007, women in the middle fifth increased their hours by 58.5 percent (from 891 hours to 1,413 hours), or 522 hours on average. This increase is the equivalent of over three months of full-time work. Of course, the increased time that married couples with children contribute as a unit to the paid labor market represents a challenge in terms of balancing work and family, challenges that are exacerbated by the lack of family-friendly workplace policies such as guaranteed paid leave, including family leave, sick leave, and vacations.

Table 2.18 Annual hours worked by married men and women age 25–54 with children, by income group, selected years, 1979–2010

						Change	
	1979	1989	2000	2007	2010	1979–2007	2007–2010
Married women							
Bottom fifth	504	686	740	650	555	28.9%	-14.7%
Second fifth	733	1,006	1,186	1,160	1,101	58.2	-5.1
Middle fifth	891	1,228	1,401	1,413	1,382	58.5	-2.2
Fourth fifth	1,095	1,325	1,458	1,462	1,496	33.6	2.3
80th–<95th percentile	853	1,152	1,085	1,374	1,437	61.1	4.6
Top 5 percent	1,156	1,401	1,540	1,552	1,513	34.2	-2.5
Married men							
Bottom fifth	1,708	1,694	1,784	1,702	1,413	-0.4%	-17.0%
Second fifth	2,057	2,129	2,118	2,092	1,912	1.7	-8.6
Middle fifth	2,145	2,185	2,224	2,200	2,082	2.6	-5.4
Fourth fifth	2,190	2,247	2,300	2,258	2,212	3.1	-2.0
80th–<95th percentile	2,421	2,469	2,498	2,426	2,392	0.2	-1.4
Top 5 percent	2,260	2,337	2,359	2,325	2,279	2.8	-2.0
Combined							
Bottom fifth	2,213	2,380	2,525	2,352	1,967	6.3%	-16.4%
Second fifth	2,790	3,135	3,304	3,252	3,013	16.5	-7.3
Middle fifth	3,036	3,412	3,625	3,613	3,464	19.0	-4.1
Fourth fifth	3,284	3,571	3,758	3,720	3,708	13.3	-0.3
80th–<95th percentile	3,274	3,621	3,583	3,800	3,828	16.1	0.7
Top 5 percent	3,416	3,738	3,899	3,876	3,792	13.5	-2.2

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement microdata

Table 2.19 examines how much of the increase in the middle fifth's annual wages is attributable to workers' increasing education and potential experience. Put simply, individuals in the middle fifth of the income distribution were better educated and somewhat older in 2007 than they were in 1979, and this should mechanically pull up their earnings. To undertake this calculation, we divided earners in the middle fifth of working-age households into 50 education/potential experience "cells," consisting of five educational categories (less than high school, high school degree only, some college attendance, college degree, and advanced degree) by 10 potential experience categories (0–5, 6–10, 11–15, 16–20, 21–25,

Table 2.19 Impact of increasing education and experience on hourly wages of individuals in the middle fifth of the income distribution, selected years, 1979–2007 (2011 dollars)

	1979	1989	1995	2000	2007	Change 1979–2007
Education						
Less than high school	22.4%	14.8%	12.2%	11.7%	9.8%	-12.6
High school only	41.6	43.6	39.4	37.4	35.5	-6.1
Some college	21.5	25.6	31.3	32.5	32.4	10.9
College degree	9.4	10.6	13.5	14.2	16.7	7.3
Advanced degree	5.1	5.5	3.7	4.2	5.6	0.5
Average potential experience (years)	17.8	17.3	18.2	19.1	20.0	2.2
Average hourly wages	$14.99	$15.14	$14.74	$16.11	$16.35	9.1%
Average hourly wages, 1979 weights*	$14.99	$14.60	$14.00	$15.36	$15.33	2.3%

* Hourly wage controlling for changes in education and experience.

Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement microdata

26–30, 31–35, 36–40, 41–45, and 46+ years an individual could have worked post-schooling, defined as age minus years of schooling minus 6).

For each year we calculate the share of earners in the middle fifth who fall into each of these 50 cells and each group's average hourly wage. We also calculate a "weight" for each cell, which is the share of total hours worked that are worked by individuals in that cell. Note that the overall hourly wage of the middle fifth is equal to the sum across cells of the weights multiplied by the hourly wage. Either higher cell wages or a movement of workers into higher-paid cells over time will increase the overall average wage. We look to see precisely how much wage growth is driven by movement into higher educational/experiential attainment cells and how much is due to higher wages given workers' levels of education and potential experience.

The first five rows of the table show the share of earners in the middle fifth with various levels of educational attainment in selected years between 1979 and 2007. The pattern toward educational upgrading is clear. For example, the share of earners in the middle fifth with a high school degree or less fell from 64.0 percent in 1979 to 45.3 percent in 2007. Conversely, the share with a four-year college degree or more rose from 14.5 percent to 22.3 percent.

The pattern toward increasing experience is evident in in the next row: Average potential experience among earners in the middle fifth increased from 17.8

years in 1979 to 20.0 years in 2007, a 2.2-year increase in potential work experience, on average.

The bottom two rows show the actual earnings per hour of the middle fifth and the hourly earnings that would result if the 1979 shares of educational attainment and potential experience were held constant over time. (It should be noted that the row "Average hourly wages" in Table 2.19 will not exactly match the hourly wages of the middle fifth in Table 2.17, due to the fact that Table 2.19 provides average hourly earnings of individuals, while Table 2.17 provides average hourly earnings of households.) The row "Average hourly wages, 1979 weights" is the result of a simple exercise that takes the educational and potential experience of 1979 as fixed (i.e., does not allow them to rise over time) and calculates a counterfactual growth in hourly earnings for earners in the middle fifth based on average hourly wages for these educational groups. In other words, this row shows what the growth in hourly wages would have been if the middle fifth had not increased their educational attainment and potential work experience.

Between 1979 and 2007, average hourly wages of the middle fifth increased by 9.1 percent. But if the effects of education and experience upgrades are removed, the increase is only 2.3 percent (as shown in the last row). Thus, over this period, three-quarters of the increase in earnings per hour was due to education and experience upgrading, not to the economy generating higher real wages for these workers independent of education and experience upgrades.

In short, educational and experiential upgrading, along with increased work hours, accounted for the vast majority of the growth of annual wages for those in the middle fifth of the income distribution between 1979 and 2007. Correspondingly, very little of the gains in annual wages were due to rising real wages independent of these factors.

Recall from Table 2.17 that 85.9 percent of the total increase in annual earnings of middle-fifth households between 1979 and 2007 was attributable to more hours being worked by these households, and only 14.1 percent was attributable to higher hourly wages. Furthermore, the calculations in Table 2.19 imply that 75 percent of that growth in hourly wages was attributable to the substantial educational and potential experience upgrading by the middle fifth, with only 25 percent attributable to higher real hourly wages for workers with a given amount of education or experience. Putting these together, less than 4 percent of the total increase in annual wages of households in the middle fifth of the income distribution is unaccounted for by more hours worked and education and experience upgrades.

Little of the growth of middle incomes can be attributed to a well-functioning economy

The comprehensive income data from the CBO provided in Table 2.13 suggested that average incomes of the middle fifth rose by 19.1 percent between 1979 and 2007. However, as Table 1.3 in Chapter 1 showed, about one-third of this growth is actually driven by the way health benefits are valued; valuing health benefits correctly (accounting for faster health care cost growth), reduces growth for the middle fifth to 12.7 percent. Furthermore, more than half of this growth was being driven by increased government transfers rather than developments in the market economy. Excluding the growth in cash transfers, Medicare and Medicaid, and other in-kind income apart from employer-sponsored health insurance, reduces growth for the middle fifth to 5.9 percent. Even further, about one-fifth of this growth was driven by the contribution to wages made by increased work hours. And even this ignores the fact that education and experience upgrading, documented earlier, generated nearly all growth in hourly wages over this time period.

When all of these factors are excluded, market-based incomes of households in the middle fifth of the income distribution rose just 4.8 percent from 1979 to 2007. This is the extent to which economic performance advanced the middle fifth of American households without the benefit of the large, public social insurance programs. Further, much of this 4.8 percent growth was concentrated in a single five-year burst in the late 1990s—a period of exceptionally tight labor markets and rapid growth in wage and salary incomes. In fact, nearly half of the 4.8 percent growth between 1979 to 2007 period was achieved between 1995 and 2000. It seems extraordinarily hard to argue that a U.S. economy that has generated 4.8 percent market-based income growth over 28 years (most of which was crammed into a five-year window) is performing satisfactorily and generating sustainable growth in middle-income living standards. Lastly, it is worth noting that most of these market-based income gains stem from rising pension incomes for the middle fifth. Given that today's pension incomes are a function of pension coverage rates that prevailed in the past, and given the trends in the rapid erosion of pension coverage rates in recent decades documented in Chapter 4, it is hard to believe that pension incomes will contribute this much to growth in middle-fifth incomes in decades to come.

Given all of this, it is hard to see how the period between 1979 and 2007 can be described as anything but disappointing for America's middle-income households. It is obvious from the gap between income growth of the middle fifth (19.1 percent) and overall income growth (51.4 percent) that sharply rising income inequality was a prime impediment to America's middle-income families reaching the full potential of income growth that the overall economy could have generated for them.

This does not mean that gains in middle-fifth incomes generated by pension income, Social Security, and health care for the elderly are insignificant. Improving retirement income security of elderly households is a positive outcome. After all, large social insurance programs such as Social Security, Medicare, Medicaid, and unemployment insurance were designed to lift living standards—or at least arrest their fall. They have succeeded in this goal. Further, the boost provided to today's middle-income households by employer-provided pension income earned from past work is another very positive economic outcome—substantial retirement income was once a luxury only available to a narrow segment of the workforce.

Yet we can celebrate these sources of living standards growth for the middle fifth while remaining concerned about their durability. The erosion of employer-provided pension coverage and quality in recent decades (surveyed in Chapter 4) suggests that employer-provided pensions will not continue to be a driver of income growth of elderly households. Further, the large social insurance programs (Social Security, Medicare, and Medicaid) that boosted income growth for the middle fifth over the nearly three decades preceding the Great Recession are under constant scrutiny, and the level of protection they will provide in the future is uncertain, hinging on political and policy decisions that will be debated continuously in the coming years.

Even if these social insurance programs are maintained and not reduced as some are advocating, they are unlikely to boost middle-fifth incomes by the same degree that they have in past decades, particularly if the health programs are deflated correctly. This is largely because a growing share of these social insurance expenditures will have to be dedicated just to covering rising health care costs. Additionally, the Social Security Administration is phasing in an increase of the normal retirement age to 67, which will lower annual benefits for workers who retire before they reach this new retirement age. In short, even if social insurance programs undergo no policy changes, the programs will contribute less to growth of middle-income living standards than provided during previous decades.

Conclusion

In recent decades, significant trends in American family and household incomes have broken sharply with the past. While incomes of families at the upper reaches of the income distribution have always far exceeded incomes at the middle and bottom segments of the distribution, the ratios between top and bottom (and top and middle) were actually quite stable for decades after World War II. In other words, overall income growth was shared proportionately across the American income distribution.

But since 1979, incomes at the top have soared while those at the middle and bottom have stagnated for long stretches, growing solidly only during the period of very tight labor markets in the late 1990s. Achieving economic growth that is

both more rapid and more broadly shared—as was the case between 1947 and 1979—is perhaps the greatest economic challenge confronting the United States.

The years between 2007 and 2010 magnified this challenge. What we now know as the Great Recession has already taken a large toll on incomes of most Americans, with declines across the income distribution as well as across racial and ethnic groups. Worse, the continued slow labor market recovery indicated by projected slow declines in unemployment suggests that incomes will also likely be slow to recover. Recall Figure 2J, which suggests typical families are unlikely to regain the level of income they had in 2000 by 2020. The prospect of two decades of lost income growth is quite likely, and this is troubling indeed.

While no serious economic analyst denies the rise in inequality since 1979, experts do contest whether middle-income households can achieve living standards growth even in the face of this rising inequality. Some of those arguing that middle-income growth in the decades preceding the Great Recession was acceptable simply define the threshold of decent economic performance as growth exceeding zero. It is true that incomes of middle-income families grew between 1979 and 2007. However, this chapter has shown that a very large share of that income growth derived from pension incomes and transfer payments to elderly households and from government- and employer-provided medical benefits, the large boost from which declines if deflated by the medical care price deflator rather than the less appropriate deflator linked to the overall price index.

Only a small share of the income growth of middle-income families comes from rising labor earnings. Given that wages constitute the majority of overall income for families in the middle of the income distribution, the failure of wages to contribute significantly to income growth between 1979 and 2007 is also a cause for much concern. Worse, the large majority of annual wage growth during this period occurred because middle-income families worked more hours and became more educated and experienced over time. These influences boosting earnings growth—more hours worked, more education obtained, and more experience gained—speak very well of middle-income families' aspirations to carve out higher material standards of living. But they do not speak well of the overall economy's performance in helping families achieve these aspirations, nor do they bode well for similar middle-income growth in the coming decades.

Table and figure notes

Tables

Table 2.1. Average family income, by income group, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-2, "Share of Aggregate Income Received by Each Fifth and Top 5 Percent of All Families, All Races: 1947– 2010," Table F-3, "Mean Income Received by Each Fifth and Top 5 Percent of Families, All Races: 1947 to 2010," and Table F-5, "Race and Hispanic Origin of Householder—Families by Median and Mean Income: 1947 to 2010." The years 1947, 1979, 1989, 2000, and 2007 are highlighted throughout the chapter because they are employment cycle peaks and are similar in nature to business cycle peaks. 1995 represents a midway point between cycles to show the growth or stagnation of the period. 2010 is highlighted because it is the most recent year for which data are available. Data are inflated to 2011 dollars using the CPI-U-RS (Consumer Price Index Research Series Using Current Methods).

Table 2.2. Average household income, by income group, 1967–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table H-3, "Mean Income Received by Each Fifth and Top 5 Percent, All Races: 1967 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.3. Minimum income thresholds for family and household income, by income group, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-1, "Income Limits for Each Fifth and Top 5 Percent of Families (All Races): 1947 to 2010," and Table H-1, "Income Limits for Each Fifth and Top 5 Percent of All Households: 1967 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.4. Sources of pretax comprehensive income, by income group, 2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group,* "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]. Shares of pretax income, by income source, are given by CBO for the bottom, second, middle, fourth, and top fifth, and the top 10, 5, and 1 percent. Average pretax income is defined as the sum of each income groups' wages, proprietors' income, other business income, interest and dividends, capital gains pensions, cash transfers, in-kind income, imputed taxes, and other income. For the purposes of this chapter, capital income is defined as the sum of capital gains, interest and dividends, and other business income categories. Sources of income for the groups are calculated by multiplying the shares of each income source by average pretax income. To calculate average pretax income by source for the 95th–< 99th percentile, the aggregate incomes of the top 5 percent were subtracted from the aggregate incomes of the top 10 percent and divided by the total number of households in the 95th–<99th percentile. Aggregate income is calculated by multiplying the number of households in each income group by average pretax income source. The number of households is calculated by subtracting the number of households in the top 5 percent from the number of households in the top 10 percent. The same calculation is done for the 95th–<99th percentile using the top 5 percent and the top 1 percent. The share of total income categories claimed by each group is calculated by dividing the aggregate income for each income source in each income group by the total aggregate income for all households, minus negative income. Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.5. Median family income by race and ethnicity, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-5, "Race and Hispanic Origin of Householder—Families by Median and Mean Income: 1947–2010." Unlike with CPS microdata analyses presented in the book, race and ethnicity categories are not mutually exclusive (i.e., persons of Hispanic origin may be of any race, and white and black Hispanics are counted in the white and black columns as well as the Hispanic column). Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.6. Share of average income growth accounted for by the bottom 95 percent, top 5 percent, and top 1 percent, by dataset and income concept, 1979–2007
Underlying data are from Piketty and Saez (2012, Table A-6); Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table H-3, "Mean Household Income Received by Each Fifth and Top 5 percent;" Congressional Budget Office *Average Federal Taxes by Income Group,* "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]; and Burkhauser, Larrimore, and Simon (2011), Table 4, "Quintile Income Growth by Business Cycle Using Each Income Series." Each income concept's contribution to overall income growth is calculated by multiplying the change in its average income from 1979 to 2007 by its share of the distribution (where, for example, the share of the distribution for the top 1 percent is .01), and dividing the result by the change in overall average income growth over the same time period.

Table 2.7. Effective tax rates for selected federal taxes, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Average Federal Tax Rates for All Households, by Comprehensive Household Income Quintile, 1979–2007" [Excel spreadsheet]. CBO defines individual income taxes as taxes attributed directly to households paying those taxes; social insurance (payroll) taxes are taxes attributed to households paying those taxes directly or paying them indirectly through their employers. Corporate income taxes are attributed to households according to a household's share of capital income, and federal excise taxes are attributed to households according to their consumption of the taxed good or service.

Table 2.8. Tax rate, transfer rate, and tax rate net of transfers, by income group, 1979–2007. Underlying data are from the Congressional Budget Office *Average Federal Taxes by Income Group*, "Average Federal Tax Rates for All Households, by Comprehensive Household Income Quintile, 1979–2007," "Sources of Income for All Households, by Household Income Category 1979 to 2007" [Excel spreadsheets] and unpublished data related to the same report on the composition of in-kind income, with a breakout for health spending (both government transfers and employer-sponsored insurance benefits). The tax rate is taken directly from the first Excel spreadsheet cited here, while the transfer rate is calculated as the share of cash transfers and Medicare and Medicaid spending in comprehensive income.

Table 2.9. Educational attainment, by income group, selected years, 1979–2007. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details. The data are sorted by household income and placed into the income groupings. Then, an hours-weighted measure of the share of all hours worked by workers with the given educational attainment is constructed for each of the income groupings.

Table 2.10. Share of market-based personal income, by income type, selected years, 1959–2010. Underlying data for total capital income, rent, dividends, interest, total labor income, wages and salaries, fringe benefits, and proprietors' income are from Bureau of Economic Analysis National Income and Product Accounts, Table 2.1, "Personal Income and Its Disposition." Underlying data for realized capital gains come from the Internal Revenue Service, *SOI Tax Stat–Individual Time Series Statistical Tables*, Historical Table 1, "All Individual Income Tax Returns: Sources of Income and Tax Items, Tax Years 1913–2005," and Table 1, "Individual Income Tax Returns: Selected Income and Tax Items for Specified Tax Years, 1999–2009." Rent, dividends, interest, total labor income, wages and salaries, fringe benefits, proprietors' income, and net capital gains are divided by the total market income (the sum of total capital income, total labor income, and proprietors' income) for select years.

Table 2.11. Effect of the shift from labor to capital income on the top 1 percent of households, selected years, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]. The counterfactual holds the share of all income accounted for by capital income constant at its 1979 level. By implication, this means that all non-capital income sources rise over that time period (since overall income growth is assumed to remain the same). This extra non-capital income is distributed across income groupings in proportion to their actual income shares over time. Then the counterfactual income level of the top 1 percent is calculated and compared with actual trends. Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.12. Corporate sector income shares, profit rates, and capital-to-output ratio, selected years, 1959–2010. Underlying data are from the Bureau of Economic Analysis National Income and Product Accounts, Table 1.14, "Gross Value Added of Domestic Corporate Businesses in Current Dollars and Gross Value added of Nonfinancial Domestic Corporate Business in Current and Chained Dollars" and BEA Fixed Assets Accounts, Table 6.1, "Current-Cost Net Stock of Private Fixed Assets by Industry Group and Legal Form of Organization." Total income shares are the sum of labor and capital income, specifically the sum of line items Compensation and Net Operating Surplus to get net value added in NIPA Table 1.14. Labor share is the share of compensation in net value added and capital is net operating surplus over net value added. Pretax profit rate is the net operating surplus divided by private fixed corporate assets, line item 2 from Table 6.1. Post-tax profit rate is the net operating surplus, without taxes, divided by private fixed corporate assets. The capital-to-output ratio is private fixed corporate assets divided by the constructed net value added.

Table 2.13. Change in sources of comprehensive income, middle fifth of households, selected years, 1979–2007 (2011 dollars). Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet], as well as unpublished data related to the same CBO Web resource on the composition of in-kind income, with a breakout for health spending (both government transfers and employer-sponsored insurance benefits). "Imputed taxes" are taxes that are not directly paid by households to government (such as the employer's share of the payroll tax), but which are "paid" in the form of lower wages and thus are added by the CBO to actual, observed wages to produce the measure of "pretax" income. "Other income" in the pensions category includes withdrawals from 401(k) plans and traditional pensions and a small category of "other income" that CBO links with pension income in

its reports. Note that the unpublished CBO data are unrounded, and produce slightly different income dollar values than the publicly available CBO dataset underlying Figures 2M and 2Z. For deflation of health care benefits (both transfers and employer-provided) we use the Consumer Price Index for medical care (CPI-MC) instead of the Consumer Price Index for Urban Consumers, Research Series (CPI-U-RS) that is used throughout the book.

Table 2.14. Change in sources of comprehensive income for elderly households in the middle fifth, selected years, 1979–2007. Underlying data are unpublished data on income source by family type from the Congressional Budget Office related to its 2010 Web resource, *Average Federal Taxes by Income Group*. "Imputed taxes" are taxes that are not directly paid by households to government (such as the employer's share of the payroll tax), but which are "paid" in the form of lower wages and thus are added by the CBO to actual, observed wages to produce the measure of "pretax" income. "Other income" in the pensions category includes withdrawals from 401(k) plans and traditional pensions, and a small category of "other income" that CBO links with pension income in its reports. The income levels for "Wages and imputed taxes" column and the "Pensions and other income" columns are calculated by the sum of the product of the shares of wages and imputed taxes multiplied by average pre-tax income for each income group and the sum of the product of the share of pensions and other income multiplied by average pretax income. The contribution to shares from income sources is calculated by multiplying the change in the types of income sources by the changes in the total income for elderly households. Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.15. Change in sources of comprehensive income for non-elderly households in the middle fifth, selected years, 1979–2007. Underlying data are unpublished data on income source by family type from the Congressional Budget Office related to its 2010 Web resource, *Average Federal Taxes by Income Group*. "Imputed taxes" are taxes that are not directly paid by households to government (such as the employer's share of the payroll tax), but which are "paid" in the form of lower wages and thus are added by the CBO to actual, observed wages to produce the measure of "pretax" income. "Other income" in the pensions category includes withdrawals from 401(k) plans and traditional pensions, and a small category of "other income" that CBO links with pension income in its reports. The income levels for "Wages and imputed taxes" column and the "Pensions and other income" columns are calculated by the sum of the product of the shares of wages and imputed taxes multiplied by average pretax income for each income group and the sum of the product of the share of pensions and other income multiplied by average pretax income. The contribution to shares from income sources is calculated by multiplying the change in the types of income sources by the changes in the total income for non-elderly households. Data are inflated to 2011 dollars using the CPI-U-RS. Note that the unpublished CBO data are unrounded, and produce slightly different income dollar values than the publicly available CBO dataset underlying Figures 2M and 2Z.

Table 2.16. Contributions to middle-fifth income growth, by income category and household type, selected years, 1979–2007. Underlying data are unpublished data on income source by family type from the Congressional Budget Office related to its 2010 Web resource, *Average Federal Taxes by Income Group*. Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.17. Contribution of hours versus hourly wages to annual wage growth for working-age households, by income group, selected years, 1979–2007. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see

Appendix A for details. Households are ranked in the same way as in the Congressional Budget Office data—by household income divided by the square root of household size. Average annual wages and annual hours worked for each income group are then calculated, and a household average for hourly wages is calculated by dividing annual wages by annual hours. Data are inflated to 2011 dollars using the CPI-U-RS.

Table 2.18. Annual hours worked by married men and women age 25–54 with children, by income group, selected years, 1979–2010. Underlying data are from the Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details.

Table 2.19. Impact of increasing education and experience on hourly wages of individuals in the middle fifth of the income distribution, selected years, 1979–2007. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details. Households are ranked in the same way as in the Congressional Budget Office data—by household income divided by the square root of household size. Fifty age/experience "cells" are created (five educational categories by 10 potential experience categories). Average hourly earnings are calculated for each cell. To get the counterfactual wage growth that would have happened *without* education and experience upgrading, we hold the 1979 cell weights (i.e., the shares of total hours worked in each year by a given cell) constant, but allow the within-cell wage growth to occur. Data are inflated to 2011 dollars using the CPI-U-RS.

Figures

Figure 2A. Real median family income, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-5, "Race and Hispanic Origin of Householder—Families by Median and Mean Income: 1947 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS.

Figure 2B. Real median income of working-age families, 1975–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details. Data are inflated to 2011 dollars using the CPI-U-RS.

Figure 2C. Average family income growth, by income group, 1947–2007. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-3, "Mean Income Received by Each Fifth and Top 5 Percent of Families, All Races: 1966 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS.

Figure 2D. Black median family income, as a share of white median family income, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-5, "Race and Hispanic Origin of Householder—Families by Median and Mean Income: 1947 to 2010."

Figure 2E. Median family income growth, by nativity, 1993–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details. Data is inflated to 2011 dollars using the CPI-U-RS and then indexed to 1993=100.

Figure 2F. Change in average family income, by income group, 2007–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical*

Income Tables, Table F-3, "Mean Income Received by Each Fifth and Top 5 Percent of Families, All Races: 1966 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS.

Figure 2G. Change in real family income from the business cycle peak years 1989, 2000, and 2007. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-3, "Mean Income Received by Each Fifth and Top 5 Percent of Families, All Races: 1966 to 2010." Data for each recession are indexed to the business cycle peak year preceding the recession=100.

Figure 2H. Average capital gains of the top 5% of the income distribution and the S&P 500 composite price index, 1979–2011. Underlying data are from Piketty and Saez (2012, Tables A-6 and A-8) and Shiller (2012). The inflation-adjusted S&P 500 data are taken directly from Shiller and converted into an index (1989=100). Income derived from realized capital gains is taken from Piketty and Saez (2012) and converted into an index as well. The Shiller data can be found at: http://www.econ.yale.edu/~shiller/data.htm, and the Piketty and Saez data can be found at: http://elsa.berkeley.edu/~saez/TabFig2010.xls.

Figure 2I. Change in real median household income, by race and ethnicity, 2007–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table H-5, "Race and Hispanic Origin of Householder—Households by Median and Mean Income: 1967–2010."

Figure 2J. Change in real family income of the middle fifth, actual and predicted, 2000–2018. Underlying data are from the Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Tables F-2, F-3, and F-5. Data are inflated to 2011 dollars using the CPI-U-RS. The projections are based on a regression analysis, based roughly on Katz and Krueger (1999), that uses the annual change in inflation-adjusted income of families in the middle fifth of the money income distribution as the dependent variable and the level of unemployment as the independent variable. The projections then use the regression parameters to forecast annual changes in middle-fifth family income based on unemployment forecasts through 2018 that are made by the Congressional Budget Office and Moody's Economy.com, a division of Moody's Analytics.

Figure 2K. Income growth for families at the 20th, 50th, and 95th percentiles, 1947–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table F-1, "Income Limits for Each Fifth and Top 5 Percent of Families (All Races): 1947 to 2010," and Table F-5, "Race and Hispanic Origin of Householder—Families by Median and Mean Income: 1947 to 2010." Data are inflated to 2011 dollars using the CPI-U-RS and then indexed to 1979=100.

Figure 2L. Income growth for families at the 20th, 50th, and 95th percentiles, by nativity, 1993–2010. Underlying data are from Current Population Survey Annual Social and Economic Supplement microdata; see Appendix A for details. Data are inflated to 2011 dollars using the CPI-U-RS and then indexed to 1993=100.

Figure 2M. Change in real annual household income, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007"

[Excel spreadsheet]. Cumulative growth is calculated by dividing the average pretax income in the base year (1979) into average pretax income in each subsequent year (1980–2007). The data provide average pretax income for the bottom, second, middle, fourth, and top fifths, and for the top 10, 5, and 1 percents. For the 80th–<90th percentile, average pretax income is calculated by subtracting the aggregate income of the top 10 percent from aggregate income of the top fifth and dividing by the total number of households in the 80th–<90th percentile. Aggregate income is calculated by multiplying the number of households in each income group by average pretax income. The number of households is calculated by subtracting the number of households in the top 10 percent from the number of households in the top fifth. This same procedure is done between the top 10 percent and top 5 percent to calculate average pretax income for the 90th–<95th percentile and between the top 5 percent and top 1 percent to calculate the average pretax income for the 95th–<99th percentile. Note that this publicly available CBO dataset is rounded, and produces slightly different income dollar values than the unpublished, unrounded CBO data underlying tables 2.13 and 2.16. Data are inflated to 2011 dollars using the CPI-U-RS, and then indexed to 1979=0.

Text Box Figure 2AA. Share of income held by high-income groups, 1913–2010. Underlying data are from Piketty and Saez (2012, Table A-3), Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, Table H-2, "Share of Aggregate Income Received by Each Fifth and Top 5 Percent of Households," and the Congressional Budget Office *Average Federal Taxes by Income Group* report, "Average Pre-Tax Income for All Households, by Household Income Category, 1979–2007" [Excel spreadsheet]. The top 5 percent share is shown because the CPS data do not allow examination of the top 1 percent.

Text Box Figure 2AB. Share of income held by top 1 percent in developed countries, 1913–2009. Underlying data are from *The World Top Incomes* database.

Figure 2N. Change in the share of market income and post-tax, post-transfer income that households claim, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Pre-Tax Income Shares All Households, by Household Income Category, 1979–2007," "After-Tax Income Shares for All Households, by Household Income Category, 1979–2007," and "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheets] and unpublished health benefit data pertaining to this report. The shares of pre- and post-tax income are taken directly from the first two datasets cited here. The change in market income is then expressed as a share of the overall change in pretax income (transfers are essentially the only nonmarket income type that changes the pretax income shares).

Figure 2O. Effect of tax policies on each household income group's share of total income, 1979 and 2007, and the difference needed in 2007 to preserve 1979 post-tax shares. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Average Federal Tax Rates for All Households, by Comprehensive Household Income Quintile, 1979–2007"and "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel Spreadsheets].

Figure 2P. Average effective federal tax rates, by household income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Average Federal Tax Rates for All Households, by Comprehensive Household Income Quintile, 1979–2007" [Excel spreadsheet] and "Effective Federal Tax Rates for All Households,

by Comprehensive Household Income Category, 1979 to 2005 (Percent)" [Excel spreadsheet supplement to *Historical Effective Federal Tax Rates: 1979 to 2005*]. The tax rates for the top .01, top 0.1 and top 1.0 percent are given by CBO. The tax rates for the 20th–<90th percentile, 90th–<95th percentile, and the 95th–<99th percentile are calculated by taking an average of each income groups' tax rate weighted by their share of total income.

Figure 2Q. Average effective federal tax rates, by income group, 1960–2004. Underlying data are from Piketty and Saez (2007), Table 2, "Federal Rates by Income Groups, 1960 to 2004." The top .01 percent, the 99.9th–<99.99th percentile, 99.5th–<99.9th percentile, and 99.0–<99.5th percentile data are provided. The 20th–<99th percentile tax rate was calculated as an average of each income groups' tax rate weighted by their share of total income.

Figure 2R. Change in real cash and medical transfer income, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet] and unpublished data related to the same report on the composition of in-kind income, with a breakout for health spending (both government transfers as well as employer-sponsored insurance benefits).

Figure 2S. Change in tax rate, transfer rate, and tax rate net of transfers, by income group, 1979–2007. Data in Figure 2S are a subset of the data in Table 2.8.

Figure 2T. Change in real annual household wages, by income group, 1979–2007. Underlying data are from the Congressional Budget Office *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]. Cumulative growth is calculated by dividing the average wages in the base year (1979) into average wages in each subsequent year (1980–2007). Average wages by income group are calculated by multiplying the share of wages by the average pretax income in each income group. See Figure 2M notes for calculations of the 80th–<90th percentile, 90th–<95th percentile, and 95th–<99th percentile. Data are inflated to 2011 dollars using the CPI-U-RS, and then indexed to 1979=0.

Figure 2U. Change in real household capital income, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979–2007" [Excel spreadsheet]. Cumulative growth is calculated by dividing the average capital income in the base year (1979) into average capital income in each subsequent year (1980–2007). Average capital income by income group is calculated by multiplying the share of capital income by the average pretax income in each income group. See Figure 2M notes for calculations of the 80th–<90th percentile, 90th–<95th percentile, and 95th–<99th percentile; see Table 2.4 notes for explanation of capital income. Data are inflated to 2011 dollars using the CPI-U-RS, and then indexed to 1979=0.

Figure 2V. Share of total household capital income claimed, by income group, 1979–2007. Underlying data are from the Congressional Budget Office, *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]. The share of capital income is each income group's capital income

share of the total capital income for all income groups. See Table 2.4 notes for the calculations for income group breakdowns and definition of capital income.

Figure 2W. Pretax and post-tax profit rates, 1959–2010. Underlying data are from the Bureau of Economic Analysis National Income and Product Accounts tables, Table 1.14, "Gross Value Added of Domestic Corporate Businesses in Current Dollars and Gross Value added of Nonfinancial Domestic Corporate Business in Current and Chained Dollars" and Fixed Assets Accounts tables, Table 6.1, "Current-Cost Net Stock of Private Fixed Assets by Industry Group and Legal Form of Organization." For calculations of pretax and post-tax profit rate, see Table 2.12 notes.

Figure 2X. Capital share of total corporate-sector income, actual and counterfactual holding 1979 profit rate constant, 1979–2010. Underlying data are from the Bureau of Economic Analysis, National Income and Product Accounts tables, Table 1.14, "Gross Value Added of Domestic Corporate Businesses in Current Dollars and Gross Value added of Nonfinancial Domestic Corporate Business in Current and Chained Dollars" and Fixed Assets Accounts tables, Table 6.1, "Current-Cost Net Stock of Private Fixed Assets by Industry Group and Legal Form of Organization." For calculations of pretax and post-tax profit rate, see Table 2.12 notes.

Figure 2Y. Share of total household income growth attributable to various income groups, 1979–2007. Underlying data are from the Congressional Budget Office *Average Federal Taxes by Income Group*, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet]. Each group's contribution to overall income growth is calculated by multiplying the change in its average income from 1979 to 2007 by its share of the distribution (where, for example, the share of the distribution for the top 1 percent is .01), and dividing the result by the change in overall average income growth over the same time period. For pretax income calculations of the 90th–<95th percentile and 95th–99th percentile, see Figure 2M notes.

Figure 2Z. Change in household income, as reported by CBO comprehensive income data and CPS money income data, by income group, 1979–2007. Underlying data are from Congressional Budget Office *Average Federal Taxes by Income Group* report, "Sources of Income for All Households, by Household Income Category, 1979 to 2007" [Excel spreadsheet], and Current Population Survey Annual Social and Economic Supplement *Historical Income Tables,* Table F-3, "Mean Income received by each fifth and top 5 percent of all families, 1966–2010." Percentage change of household income is calculated between the years 1979 and 2007. Note that this publicly available CBO dataset is rounded, and produces slightly different income dollar values than the unpublished, unrounded CBO data underlying tables 2.13 and 2.16. Data are inflated to 2011 dollars using the CPI-U-RS, and then indexed to 1979=0.