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The Great Recession and Distribution of Income in California

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SUMMARY

The effects of the Great Recession have been felt far and wide. According to official measures, the recession ran from December 2007 until June 2009. During that time, California experienced record unemployment, a housing market bust, sizable budget shortfalls, and downturns across nearly all major industries in the state. These problems have continued well past the technical end of the recession.

California's families have been hit hard by the Great Recession and its aftermath. Family income has declined across the spectrum, with lower incomes seeing the steepest losses (Table 1). The gap between upper- and lower-income families is now wider than ever. And the number of families in the middle-income range is shrinking. Specifically, we find:

- Total income for the median family in California fell more than 5 percent between 2007 and 2009 (the official recession years) and an additional 6 percent between 2009 and 2010.
- At the lowest income level—the 10th percentile—family income fell more than 21 percent in total. At the 90th percentile, family income fell 5 percent.
- After adjusting for California's higher cost of living, just less than half—47.9 percent—of individuals were in families that could be considered middle income in 2010.

As these findings suggest, the Great Recession has brought us to new extremes. These include record high measures of inequality, near-record lows in the proportion of middle-

Table 1. Family income fell in every income category between 2007 and 2010

	Family income ($)				Percentage change	
	2007	2008	2009	2010	2007–2009 (official recession)	2007–2010 (actual peak to trough)
10th percentile	19,100	17,000	16,200	15,000	–15.2	–21.5
25th percentile	34,600	34,200	32,400	31,200	–6.4	–10.0
Median	68,400	66,000	64,700	61,100	–5.4	–10.7
75th percentile	122,000	122,300	115,600	112,400	–5.3	–7.9
90th percentile	188,300	187,500	183,700	179,100	–2.5	–4.9
95th percentile	246,000	232,100	235,600	226,300	–4.2	–8.0

SOURCE Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Family income is adjusted to 2010 dollars and normalized to account for family size. See Technical Appendix A for details.

income families, and record high unemployment and unemployment duration. Through 2010, past the technical end of the recession, there has been no evidence of recovery in income across the distribution.

Unemployment and underemployment—working fewer hours or weeks per year—were hallmarks of the Great Recession, and California is still facing high unemployment numbers. We find that even for working families, income fell during the Great Recession for the middle of the distribution and below. Underemployment, rather than a decline in wages, appears to have driven this income drop. This suggests that policies that create jobs and promote full-time employment, rather than those that target wage rates, are more likely to be effective in aiding the recovery of family income.

We do not yet know the timing of the recovery from the Great Recession and how that recovery will be shared across the income distribution. If previous recovery patterns repeat themselves, it is likely that the lower half of the income distribution will recover much more slowly than the upper half, potentially allowing already record-high income inequality to persist. The erosion of low and middle incomes raises concerns about the equity of economic opportunity in the state.

The most important factor driving the gap between high- and low-income workers is education. Looking ahead, California may need to find innovative ways to promote opportunity through education, especially so that middle- and lower-income families are not left behind.

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Introduction

One way to understand the effects of the Great Recession on California residents is to examine overall trends in income. In this report, we focus on describing income at the family level. This includes income from all sources (including investments and government sources) but is predominantly composed of earnings from employment. Because of this, we also closely examine the relationship between the extensive downturn in the labor market and the shift in the distribution of family income.

As previous PPIC reports have shown, changes in the distribution of income are generally greater in California than in the rest of the United States.[1] High-income families earn more in California and low-income families earn less. Over time, high incomes in California have risen substantially, whereas low incomes have seen small declines. Because of these trends, the divide between high- and low-income families has been larger and faster-growing in California than in the rest of the nation. At the same time, fewer and fewer families fall in the middle-income range.

The Great Recession exacerbated these trends. Compared to the rest of the country, California experienced larger declines in income at the bottom of the distribution and smaller declines at the top—leading to the largest gap between upper and lower incomes in at least 30 years. Income at the median shrank by more than 10 percent. And by 2010, just 49.7 percent of California's families could be considered middle income, a new low.

Unemployment spiked sharply during the Great Recession, especially in California. The duration of unemployment has also risen precipitously. But we found that even for those who had jobs, median income fell. This appears to have less to do with across-the-board declines in wages and more to do with decreases in the likelihood of both full-time work and overall hours worked. These findings suggest that policies that create jobs and promote full-time employment are more likely to be effective in aiding recovery than those that target wage rates.

This report first describes the changes in income distribution in California during the Great Recession. We then examine the effects of unemployment and underemployment—labor market outcomes that drove these changes. Next, we investigate how income changes have been experienced across regions and demographic groups in California. Finally, we give context to these changes by comparing income trends during the Great Recession to trends in previous recessions.

Changes in the distribution of income are generally greater in California than in the rest of the United States.

Data and methods

In this report, we use the Annual Social and Economic Supplement of the CPS data collected by the U.S. Census Bureau and Bureau of Labor Statistics every March from 1980 to 2011. The CPS data provide a comprehensive picture of what has happened to income on an annual basis through March 2010.

We measure income for families rather than individuals or households.[2] We assume that the family is the primary unit across which income is shared and that nonrelated individuals in a household do not share income. The bulk of our study describes total family income deriving from all sources—including work, interest on investments, pensions, unemployment, and welfare—and is measured before tax.[3] In some analyses, we examine family income from work separately.

Our total family income measure excludes nonmonetary aspects of family income, such as food assistance, nonpecuniary job benefits, or other in-kind transfers. Given these caveats, we proceed with adjusting CPS family income in a number of ways. These adjustments make our income estimates comparable over time (i.e., by removing the effect of inflation) and across family size. Except where noted otherwise, all estimates presented can be understood as the 2010 dollar equivalent for a family of four; these adjustments remove the effects of inflation and allow us to compare across families of different sizes.

Further details regarding our data and methods may be found in Technical Appendix A.

However, before turning to the central analysis, we will take a moment to discuss our two distinct but equally useful ways of looking at income distribution.

Tracking Income Distribution

Our data allow two different views of income distribution in California. The first involves looking at changes in the distribution of income over time—not for particular families but for the overall distribution of income across California's entire population.[4] In this approach, we break the population into percentile groups: The family at the 90th percentile of income has an income level higher than 90 percent of the population, and the family at the 10th percentile has income higher than only 10 percent of the population. In these terms, the exact middle-income, or median, family is one that falls at the 50th percentile. This middle-income family is not the same every year but instead shifts as the income distribution rises and falls.

Examining the distribution of income is therefore important to understanding how the population is doing overall. But it is also useful to know how many families fall into each income category. To find this out, we define categories of income that are roughly constant over time and see how many families fall into the different groups.

> The Great Recession hit incomes across the distribution—but certain income groups felt its effects more strongly than others did.

To do this, we use definitions of income categories familiar to most readers: low income, middle income, and high income. Since the middle group is otherwise quite broad, we sometimes separate the middle-income group into thirds: lower middle, central middle, and upper middle.

To define these groups, we use family income cutoffs common to similar research and based on a federal measure of standard of living, the federal poverty level of income (FPL).[5] Low income is defined as at or less than two times the FPL, or $44,200 and below.[6] Middle income is defined as between two and seven times the FPL, or $44,200 to $154,800.[7] This spread is large because we divide the middle-income group into three roughly equally sized portions.[8] High income is anything above $154,800.

Measuring the Great Recession

In this report, we observe the Great Recession's effect through its two official years, 2008 and 2009, as well as the first year after, 2010.[9] Suitable data are not yet available for 2011. In some tabulations, we compare the Great Recession to the income peak in 2007, immediately beforehand. This gives an initial measure of the severity of the decline from peak to trough. In other tabulations, we compare the official two years of the recession (2008 and 2009) to the two years immediately preceding it (2006 and 2007). These give a measure of the severity of the decline from the recent peak period to the period of the current recession.

Impact of the Great Recession

The Great Recession hit incomes across the distribution—but certain income groups felt its effects more strongly than others did. In this section, we detail overall trends in income during the Great Recession, place these trends into a long-term context, and consider the shifting size of each income class over time.

Changes in Income Distribution during the Great Recession and Beyond

Wage and salary income for the median family in California fell more than 5 percent during the Great Recession (Table 2). Declines below the median were even larger—at the 10th percentile, income fell more than 15 percent

Table 2. Family income fell further in California than in the rest of the United States

California

	Family income ($)				Percentage change	
	2007	2008	2009	2010	2007–2009	2009–2010
10th percentile	19,100	17,000	16,200	15,000	–15.2	–7.4
25th percentile	34,600	34,200	32,400	31,200	–6.4	–3.8
Median	68,400	66,000	64,700	61,100	–5.4	–5.6
75th percentile	122,000	122,300	115,600	112,400	–5.3	–2.7
90th percentile	188,300	187,500	183,700	179,100	–2.5	–2.5
95th percentile	246,000	232,100	235,600	226,300	–4.2	–3.9

Rest of the United States

	Family income ($)				Percentage change	
	2007	2008	2009	2010	2007–2009	2009–2010
10th percentile	18,900	18,200	17,000	16,300	–10.3	–4.2
25th percentile	37,900	36,500	35,300	34,200	–6.9	–3.2
Median	70,500	67,800	66,100	65,800	–6.3	–0.3
75th percentile	115,900	111,900	111,500	110,500	–3.8	–1.0
90th percentile	170,600	164,800	165,100	164,400	–3.2	–0.4
95th percentile	212,500	204,200	204,700	203,800	–3.7	–0.5

SOURCE Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Family income is adjusted to 2010 dollars and normalized to account for family size. See Technical Appendix A for details.

between 2007 and 2009. Above the median, family income also decreased during the recession but by only a fraction of that amount, and the 90th percentile fell about 2 percent. Although the recession officially ended in 2009, incomes continued to fall in the year following. Between 2009 and 2010, median family income fell another 5 percent—the same decline experienced over the *full two years* of the recession. Incomes both above and below the median also continued to fall into 2010. The rate of the decline across the distribution was at or above the rate experienced during the recession, on a per year basis. By that measure, there is no evidence of a slowing of the income effects of this recession.

The highest income level we can consistently measure is at the 95th percentile.[10] As Table 2 shows, the 95th percentile of income in California—meaning families that have income higher than 95 percent of the population—also fell during the recession. The 95th percentile appeared to rebound by 2009 but took another hit in 2010. Thus, even the top end of the income distribution does not yet appear to be in recovery. However, the declines experienced at the top of the income distribution are over three times *smaller* than those experienced at the lowest end of the distribution.

Compared to the effects in the rest of the United States, the Great Recession's effects in California are somewhat mixed. First, note that family income levels in California were higher for all cutpoints above the median, as well as the 10th percentile, before the recession. Despite larger declines between 2007 and 2010, income in all categories above the median—the 75th, 90th, and 95th percentiles—in California were still higher than in the rest of the United States by 2010. The same is not true, however, for the lowest cutpoint of the distribution. The 10th percentile fell 56 percent more in California than in the rest of the nation, bringing it lower than the national level by 2010.

LUCY NICHOLSON/REUTERS

By 2010, families at the 10th percentile had incomes roughly 24 percent lower than in 1980.

Long-Term Changes in Income Distribution

To put these income distribution changes into a larger context, we will now examine a longer period: 1980–2010 (Figure 1). This figure shows the percentage change in income at several points in the income distribution in each year compared to the base year of 1980.[11]

All income levels have experienced significant peaks and valleys over this time period. The 50th percentile reached its 30-year peak in 2003, with the median family earning 12 percent more income than in 1980. After the most recent low in 2004, the median began to recover but was hit again by the Great Recession. The decline between 2007 and 2010 completely reversed—and more—the recovery from the previous recession. By 2010, the median family earned about 1 percent less than the median family in 1980. However, despite declines during the Great Recession, median family income is still higher than it was in the lows of the recessions of the 1980s and 1990s.

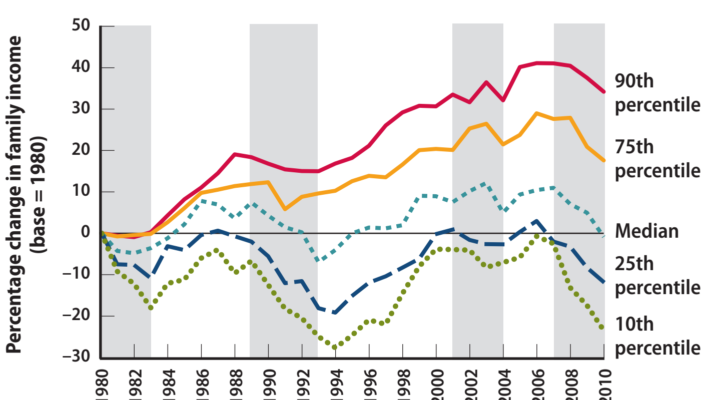
The same cannot be said for income below the median. Not only did the Great Recession strip away any gains in income at the 10th and 25th percentiles that followed the bust of the dot-com bubble, but it also pushed incomes at these levels to near-record lows. By 2010, families at the 10th percentile had incomes roughly 24 percent lower than the 10th percentile did in 1980, and families at the 25th percentile had incomes 12 percent lower. The 10th and 25th percentiles have not yet fallen to the lows of the 1990s recession, but by 2010 there is no evidence that incomes have yet troughed in the Great Recession.

At the other end of the spectrum, the 90th percentile saw a decline from its 2006 peak. However, the gains at the 90th percentile over the past three decades mean that despite the Great Recession, the 90th percentile of income was still 34 percent higher in 2010 than in 1980. Income declines at this level are also much less severe than the declines experienced at lower points in the distribution. Notably for the 90th percentile, the Great Recession has not as of yet stripped away the recovery made after 2004.

The 75th percentile of income saw larger declines than the 90th percentile during the Great Recession, bringing it to a level last seen in the late 1990s. However, over the longer term, income at the 75th percentile is still substantially higher than it was in previous decades. By 2009, the 75th percentile was earning over 18 percent more than in 1980.

Currently, declines in the lower income levels during the Great Recession appear similar in severity to those felt in the early 1990s. But the steepness of the recent declines outpaced that of the early 1990s. It remains to be seen if lower income levels will fall further in 2011 and beyond.

Figure 1. Family income moves with the business cycle



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Family income is adjusted to 2010 dollars and normalized to account for family size. See Technical Appendix A for details. Shaded regions denote recessionary periods as measured by peaks and troughs in income levels.

The Growing Income Gap

In California, the gap between lower- and upper-income families has been larger than in the rest of the nation for many decades and has tended to increase in recessionary periods. The Great Recession is no exception.

A common way to examine this gap is to look at the ratio of income for families at the top of the distribution to families at the bottom. Here, we present two standard income ratios: the ratio of income at the 90th relative to the 10th percentile (the "90/10 ratio") and at the 75th relative to the 25th percentile (the "75/25 ratio").[12] The former is a more extreme measure of high versus low income, whereas the latter is less so because the 75th and 25th percentiles are closer to the middle of the distribution. These measures are useful for understanding gaps between rich and poor, for example, as measured by shifts in the overall distribution of income.

During the Great Recession in California, the 90/10 ratio jumped to its highest level ever, 11.9, in 2010 (Figure 2).[13] This means that families at the 90th percentile (where only a tenth of the population does better in terms of income) had income 11.9 times higher than families at the 10th percentile (where only a tenth of the population does worse). The disparity between high and low incomes during the Great Recession even exceeded the gap experienced during the long and severe recession of the mid-1990s, during which the 90/10 ratio reached 11.0 (in 1997).

In the rest of the country, the 90/10 ratio also grew to a new high during the Great Recession, to 10.1 by 2010. But this ratio remained much smaller in the nation as a whole than in California alone.

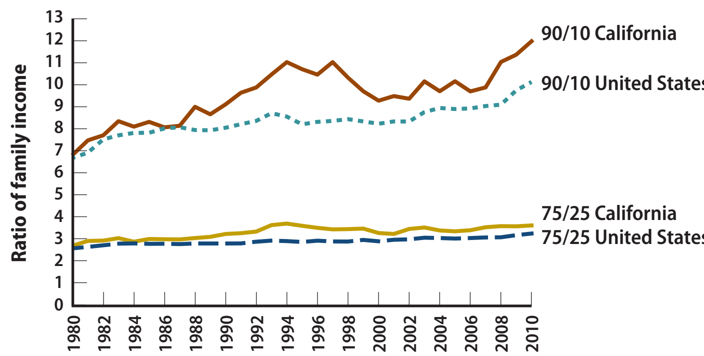
The gap between income levels was less volatile toward the middle of the distribution. The 75/25 ratio remained fairly steady, at roughly 3.6 in California and 3.2 in the rest of the United States in 2010, both up just one-tenth of a point from 2007.

How Big Is Each Income Group in California?

We now turn to our second view of income in California, which holds categories of income constant and asks how many families fall into each category. Here, we show three income categories—low, middle, and high—over time (Figure 3). We also adjust these figures to account for the high cost of living in California. The average California family must have a higher income level to maintain the same standard of living as the average family in the rest of the country.[14] So far, the Great Recession has not shifted the size of each income group from its longer-term trend. But it has created some new highs and lows.

Most Californians live in middle-income families. In 1980, the proportion of these families reached a 30-year

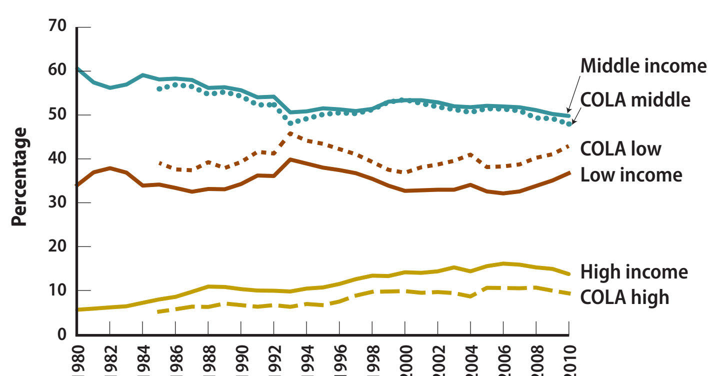
Figure 2. Gaps between upper- and lower-income families are larger in California than in the rest of the United States



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: All ratios x/y represent family income at percentile x relative to family income at percentile y in given year. Family income is adjusted to 2010 dollars and normalized to account for family size. See Technical Appendix A for details.

Figure 3. The share of middle-income families has fallen in California



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Because of data availability, we are able to adjust for cost of living (COLA) only from 1985 forward. See note 8 and Technical Appendix A for details on the definition of income categories.

high of 60 percent, a number that has been trending downward ever since. The percentage of individuals in middle-income families reached a new low of 49.7 percent in 2010. At the same time, the low-income category increased to 36.6 percent, a level not experienced for over a decade. And the high-income group dropped slightly to 13.7 percent, a level last experienced around 2001.

On net, the recession and the year following have worsened California's income picture as viewed through these three income categories. Before the recession, the long-term trend showed net improvement: The share of families categorized as low income was relatively stable, and the declining share counted as middle income was supplanted by an increasing high-income share. However, during the recession and the year following, the trend reversed: Declines in the share of families in high- and middle-income categories were replaced with an increasing share classified as low income.

The distribution of Californians across income groups mimics the trend in the United States overall.[15] However, California's families are less likely than those in other states to be counted as middle income and are more likely to be either low or high income. In the rest of the country, as of 2010, 55 percent are middle income, 33 percent low income, and 12 percent high income.

The Great Recession led to persistently high unemployment levels, with California's employment picture among the worst in the nation.

When income is adjusted for California's higher cost of living, we find that even fewer individuals—47.9 percent—were in families considered middle income in 2010. In our data going back to 1985, the middle-income group in the state has never fallen to a level this low. After similar adjustments, the low-income group rises to 42.9 percent and the high-income group falls to 9.3 percent.

The Effects of Unemployment and Underemployment

The Great Recession led to persistently high unemployment levels, with California's employment picture among the worst in the nation. By the official end of the recession in June 2009, California's unemployment rate had climbed to 11.6 percent, compared to 9.5 percent in the nation as a whole. However, the official end of the recession did not signal a recovery in employment. In June 2010, a full year after the recession ended, California's unemployment rate stood at 12.3 percent; the national rate was 9.5 percent.[16] This was the state's highest unemployment rate since 1980—and it was much higher than in other recessions in the last three decades.[17] Although the Great Recession has ended, as measured by other official indicators,[18] the employment picture remains bleak, particularly for California. Forecasts suggest that the unemployment rate will decrease slowly, with high rates continuing into the near future.[19]

Since employment is the main source of income for most Californians, the unemployment rate is typically highly correlated with changes in income: Troughs in median family income are usually coincident with peaks in the unemployment rate. Coming out of recessionary periods, we typically see decreases in the unemployment rate and concurrent increases in median family income (see Technical Appendix C for a detailed figure).

How did California's employment trends during the Great Recession correlate with changes in the state's distribution of income? In this section, we begin by detailing exactly how much labor market earnings matter for family income. Next, we identify associations—rather than causal relationships—between employment trends and changes in income distribution. Throughout, our focus is on recent trends—for the most part, we compare the two relatively prosperous years before the recession to the two official years of the Great Recession and then examine what has happened in 2010, the first year following the official recession.

The Many Sources of Family Income

Family income derives from multiple sources. Earnings from work clearly are related to family economic well-being. However, other sources of income matter as well. In times of constricted labor market opportunities, income from sources other than wages—such as unemployment compensation, welfare, or earnings on investments—can compensate for declines in family income.

Both before and during the Great Recession, male labor market earnings made up the majority of family income across the spectrum (Figure 4). These earnings contribute slightly less to family income in the low-income group than in the middle-income group.[20] During the Great Recession, male earnings declined as a share of total family income in all groups except the upper-middle-income category.

Female earnings are the second most sizable component in family income. During the Great Recession, the importance of female earnings increased relative to other sources—by 2 percentage points for lower-income families and by 4 percentage points for lower-middle-income families.

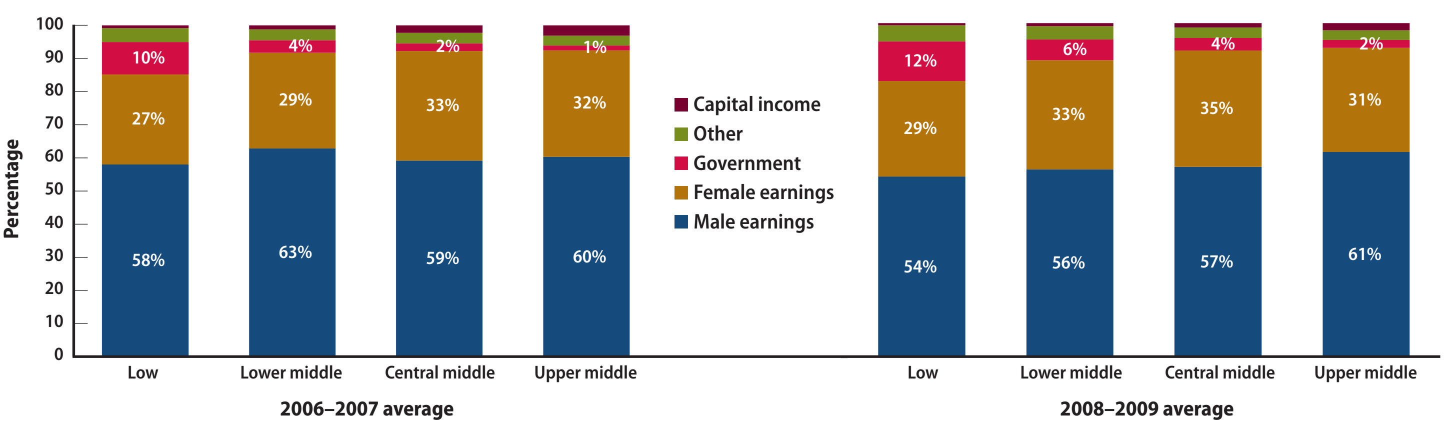
For low-income families, the third most important source of income is the government; this includes unemployment, Social Security, public assistance, and Supplemental Security Income. During the Great Recession, income from government transfers was increasingly important, growing from 10 to 12 percent. Government transfers are a smaller fraction of family income for other groups, but during the Great Recession they doubled across the board. For example, lower-middle-income families received 3.8 percent of their income from government transfers before the Great Recession but 6.3 percent during the recession (2008–2009) and 7.2 percent in 2010 (see Technical Appendix C for details).

External research finds that compared to previous recessions, government transfers played a larger role in supporting income in the Great Recession than they did in previous recessions.[21] Thus, even though the share of family income from government sources is small relative to the share from earnings, it is a qualitatively important factor.

Unemployment

As we have seen, employment income makes up the bulk of overall income for California families. Of course, employment differs across California's income groups. During the

Figure 4. Male earnings are the major source of family income, even during the Great Recession



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

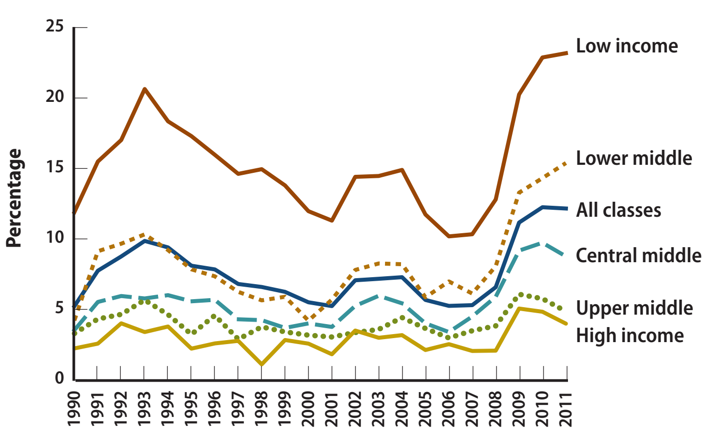
NOTES: Income shares in each chart represent the averages across each two-year period. Although income category definitions are based on normalized family income, income shares are based on inflation-adjusted income and are not normalized for family size. The high-income group is not included here because shares are heavily affected by top-coding. See Technical Appendix A for details on data construction and Technical Appendix C for a similar figure showing the distribution of income for families in 2010. We do not track families in each income category over time; rather, each chart should be viewed as a snapshot of families in the given period who happen to fall into the given income category. Thus, changes in income sources are confounded here with changes in composition of families in each income category.

Great Recession, unemployment jumped in all income groups, at least doubling the rate of 2007. Unemployment spiked most steeply for low- and lower-middle-income groups (Figure 5). By 2011, 12.2 percent of Californians were unemployed. Among low-income individuals, the unemployment rate was even higher—23.2 percent. Since income from working makes up the vast majority of family income, it is not surprising that the groups experiencing the largest declines in income would also have the highest unemployment rate; indeed, labor market outcomes determine, to a large extent, the income category into which a family is classified.

Only in the low- and lower-middle-income groups did the unemployment rate show no sign of tapering off by 2011. Although for the other income groups there are signs of a turnaround, the unemployment rate remains stubbornly high—higher than seen in decades.

Not only has the recession brought about rates of unemployment higher than in previous recessions, but the duration of unemployment is also longer than in previous recessions. The average spell of unemployment has increased steadily from the beginning of the Great Recession through 2011, from an average of 15.8 weeks to 37.4 weeks, respectively (see Technical Appendix C for further detail). Long spells of unemployment have been experienced across all income categories: from an average of 29 weeks for upper-middle-income unemployed workers to 40 weeks for low-income unemployed workers in 2011. During the recession of the early 1990s, the average duration of unemployment peaked at 23.6 weeks.

Figure 5. Unemployment rate by income group, in California



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTE: See Technical Appendix A for details on the definitions of income groups.

Not only has the recession brought about rates of unemployment higher than in previous recessions, but the duration of unemployment is also longer than in previous recessions.

Underemployment

High unemployment rates largely explain the decline in income across the distribution during the Great Recession. But family income declined even for many who had jobs during the Great Recession. Underemployment—defined here as working less than a full work-week—played a significant role in these declines.

By 2008–2009, median income from wages and salary for low-income workers had fallen 16 percent from what it had been two years before (Table 3).[22] For lower-middle and central-middle workers, the drop was 3 to 4 percent. It remained about the same for upper-middle and high-income workers.

Even though these individuals were working, they worked less, on average, during the Great Recession—for example, the percentage of workers in the low-income group who reported full-time employment fell 10.1 percent during the Great Recession (where full time is defined as working at least 35 weeks). The rate of full-time employment fell for all other income groups, as well.

Average hours worked also fell during the Great Recession. On average, workers in low-income families worked 11 percent fewer hours—a decline about seven times larger than that experienced by the central-middle-income fami-

Table 3. Many individuals worked less during the Great Recession

	Change during the recession (%) (from 2006–2007 to 2008–2009)				Change in the year following the recession (%) (from 2008–2009 to 2010)			
Family income category	**Median income from wage and salary**	**Percentage employed full time**	**Average hours worked**	**Median hourly wage**	**Median income from wage and salary**	**Percentage employed full time**	**Average hours worked**	**Median hourly wage**
Low	–15.5	–10.1	–10.5	–2.1	–1.3	1.4	–2.1	4.0
Lower middle	–3.7	–6.4	–6.1	5.0	–1.3	3.5	0.4	–1.3
Central middle	–3.3	–0.4	–1.5	3.2	1.1	2.2	0.1	–0.5
Upper middle	–0.5	–0.5	–0.6	3.6	4.1	2.4	0.1	1.8
High	–0.5	–0.8	–1.0	–1.2	3.4	3.2	1.2	3.9

SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: All statistics pertain to wage earners who worked at least one week in the given year and are calculated on a per worker basis. Self-employed workers are excluded. See Technical Appendix C for details and underlying estimates.

lies. (These statistics exclude workers who were unemployed all year but include workers who were unemployed part of the year.)

During the Great Recession, the average hourly wage rate fell for workers in the low-income and high-income groups by a small amount but increased or stayed about the same on average for workers in other income groups. This pattern indicates that underemployment rather than declining wages, for most workers, was behind falling earnings. Because inflation was extremely low during the Great Recession, it is indeed unsurprising that wages would remain roughly constant and that employers would instead adjust hours or number of employees.[23]

These findings provide some perspective on the relative importance of unemployment and underemployment in driving the income trends we have observed. Recent research in the national context suggests that the decline in male employment was the most important factor in the decline in median income during the Great Recession. This factor is about three times more important than any other in driving down median incomes during the recession.[24] The same appears to be true for California. In addition, it appears that income declines in the Great Recession are strongly related to (1) whether family earners are employed and (2) for those who are employed, how much they worked.

In the year following the official recession, there are small signs that for those working, labor market conditions were beginning to improve, at least for higher-income workers. Across all income categories, the percentage of workers employed full time increased between the years of the official recession to the year after. Despite this positive sign, there was little improvement in average hours worked

DAVID MAUNG/BLOOMBERG VIA GETTY IMAGES

There are signs of a turnaround for some income groups, but for low- and lower-middle-income groups the unemployment rate remains stubbornly high.

and mixed outcomes in hourly wage rates. Whereas median income increased for upper-middle- and high-income workers, it continued to decline for low- and lower-middle-income workers. (Indeed, relatively worse labor market outcomes partially drove the classification into these lower-income groups.) Although signs of underemployment for middle- and high-income workers began to wane by 2010, the mixed picture for lower-income workers reveals a labor market that, by 2010, had not improved drastically, even for those employed. In addition, as we noted in the previous section, their rate of unemployment had yet to turn around.

HEACPHOTOS/FLICKR/CREATIVE COMMONS

The Great Recession hit Hispanic and black families hard; they experienced the largest declines in median family income.

Who Was Most Affected by the Great Recession?

As we have seen, the Great Recession affected all Californians. Incomes fell and unemployment grew for all income groups, though for those in the low- and lower-middle-income groups the effects have been more severe. In this section, we assess the demographic and geographic components of the income shocks of the Great Recession.

Changes across Demographic Groups

Throughout this section, we define demographic groups through the head of the family. For example, we categorize a family as "immigrant" if the head of the family reports that he or she is an immigrant. Similarly, we consider a family to be white if the head of the family reports that he or she is white. This is a straightforward way to classify families according to demographic characteristics, but it does overlook the subtlety of mixed-type families. For example, many families classified here as immigrant include native-born children. However, since income changes are driven by labor market conditions that primarily affect the head of the family, our method allows for a basic but important overview of the Great Recession's effect on various demographic groups.

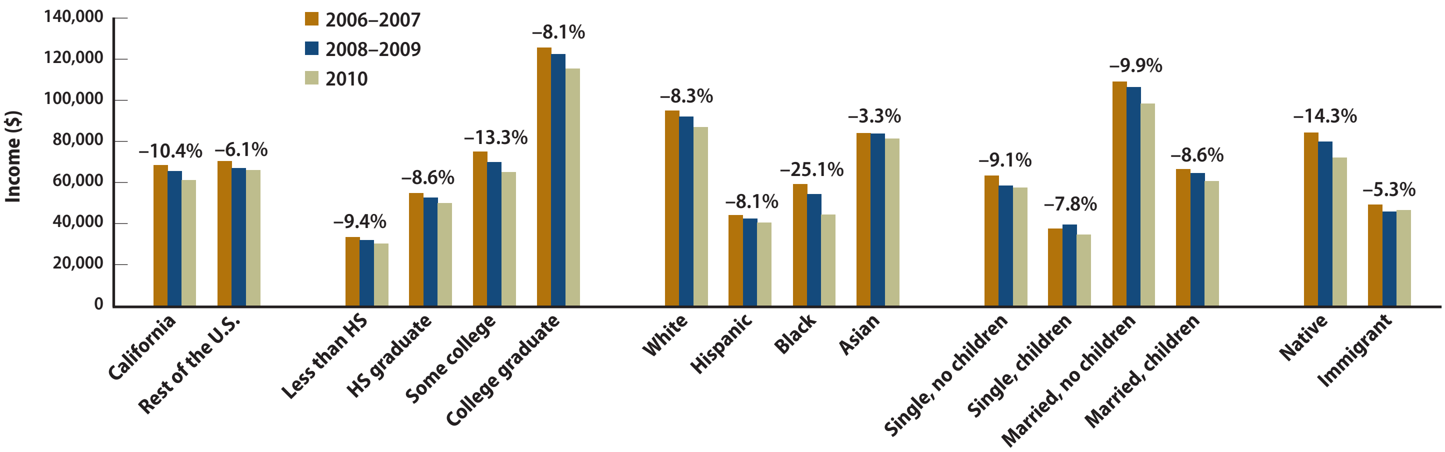
The Great Recession intensified income and employment differences among demographic groups. Even so, declines were experienced across the demographic spectrum. Figure 6 shows nearly across-the-board declines in income from the peak years before the recession to the official two years of the recession and beyond, for families across education, ethnicity, nativity, and structure. From the peak years to 2010, no demographic group in California experienced gains in median income.

Ethnicity and Nativity

Many Hispanic and black families were struggling economically even before the Great Recession. Hispanic families in California have the lowest median income level across ethnic groups, followed by black families.

The Great Recession hit these two groups hard. They experienced the largest declines in median family income, at 8 percent for Hispanic families and 25 percent for black families. Correspondingly, the unemployment rate for labor force participants in families headed by blacks and Hispanics jumped to the highest levels across ethnic groups during the Great Recession, to 19 and 15 percent in 2008–2009,

Figure 6. Median income fell across all of California's demographic groups during the Great Recession and beyond



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Income is adjusted to 2010 dollars and normalized to account for family size. Characteristics are defined by head of family; outcomes pertain to family or labor force participants in the family. Note that the race/ethnicity groups are mutually exclusive. Percentage changes measure the change from 2006–2007 to 2010. All demographic breakdowns pertain to California families only. The 2006–2007 and 2008–2009 bars indicate the median over the two years pooled for larger sample size.

respectively (see Technical Appendix C for details). The unemployment rate in families headed by blacks was substantially higher than for families headed by Hispanics by 2010, despite having reached near parity during the recession.

Families headed by Asians were less affected, and there was a comparatively small 3 percent decline in income from peak to trough. Asian unemployment rates were the lowest across ethnic groups before the recession—at 4 percent—and remained the lowest during the recession, despite having more than doubled to 9 percent by 2010.

The median white family has the highest family income of any ethnic group in California. This fell during the Great Recession by about 3 percent and by another 5.6 percent in 2010. The total decline in median income for white families was similar to that of Hispanic families and more than for Asian families. The unemployment rate for white families rose from 4.5 percent before the recession to 10.2 percent in 2010—a rate still lower than that of Hispanic or black families in California.

Although it is correlated with ethnicity, we look separately at nativity, finding that both native and immigrant families experienced sizable declines in income at the median. Family income fell a total of 14 percent for families headed by a native-born person and 5 percent for families headed by a foreign-born person. However, the level of income remained higher for native-headed households despite the sharp decline. Although both groups experienced similar changes in unemployment, the rate for households headed by natives was lower than that of households headed by immigrants both before and during the recession (see Technical Appendix C).

Many Hispanic and black families were struggling economically even before the Great Recession.

Educational Attainment

Educational attainment mattered during the Great Recession. The more education, the higher the median income and the lower the unemployment rate among families in California. However, the median family income of all education groups declined through 2010.

Families headed by less-educated adults, who already had high unemployment rates before the recession (on the order of 11 percent), experienced the largest increases in unemployment and corresponding decreases in income. We estimate that over 19 percent of workers in families headed by someone who had not graduated from high school were unemployed over 2008–2009. Fortunately, the unemployment rate for this group did not increase in 2010 (see Technical Appendix C).

As one would expect, median family income is higher the higher the educational attainment of the head of the family. However, surprisingly, one group of more-educated families—those with some college education—experienced the largest declines during the Great Recession. The median family income for this group fell 13 percent, compared to 8 percent among college graduates and 9 percent among high school graduates.

Family Structure

Changes in income varied less across different family types during the Great Recession than across other demographic categories. From the peak to 2010, median income fell between 8 and 10 percent for all family types. The median income of married people with no children experienced the largest declines—at 10 percent—on a family-size-adjusted basis.[25]

> The unemployment rate increased to historically high levels in California during the Great Recession, but it was precipitously higher in some regions than in others.

Single-parent families have the lowest median-income levels of any family type but experienced a somewhat smaller decline. These families had a small increase in income at the median during the two official years of the recession but a marked decline in 2010. This is correlated to their high rate of unemployment, at 18 percent in 2010. This group of families is headed by adults with a lower attachment to the labor force than other family types. Before the Great Recession, only 55 percent of single parents were employed, compared to 62 percent among single parents without children, 58 percent among those married without children, and 63 percent among those married with children. For this reason, total income for single-parent families is slightly less tied—at least directly—to changes in labor market conditions.[26]

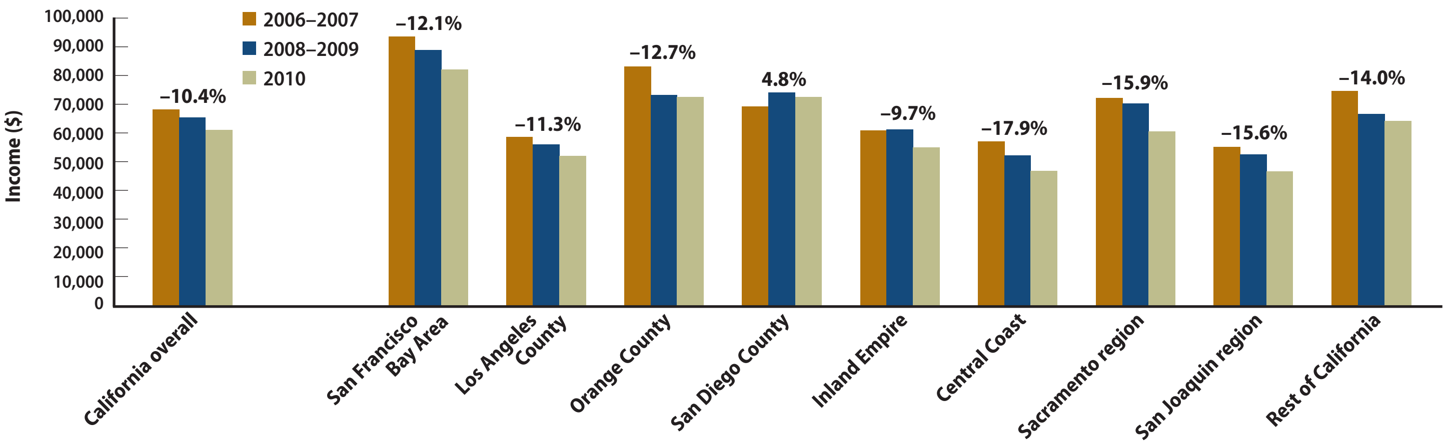
Changes across Regions

The effects of the Great Recession on income varied widely across California's regions. Industries are not distributed equally across the state, nor are people. Over 40 percent of the population lives in just two areas: the San Francisco Bay Area and Los Angeles County. Trends in these regions therefore tend to drive trends for the state as a whole. However, for a closer look at what happened around the state, we broke California into eight large regions: the San Francisco Bay Area; Los Angeles, Orange, and San Diego Counties; the Inland Empire; the Central Coast; and the Sacramento and San Joaquin regions.[27]

As mentioned above, the unemployment rate increased to historically high levels in California during the Great Recession, but it was precipitously higher in some regions than in others. The Inland Empire, Central Coast, Sacramento, and San Joaquin regions all experienced unemployment rates higher than the California average in 2008–2010.[28] However, no region was spared—the lowest regional unemployment rate we estimate occurred in San Diego County, and even there the rate was 7.9 percent in 2010—a level not seen in the state since about 1995 or in the country as a whole since about 1984.

It comes as no surprise, then, that most regions saw declines in income for the median family (Figure 7). The largest declines occurred in the Central Coast, at 18 percent, followed by the Sacramento and San Joaquin regions, which both fell 16 percent. Only in San Diego County did median family income increase. In the Inland Empire, there was essentially no change in median family income before and during the Great Recession but about a 10 percent decline in 2010.

Figure 7. Median income fell across all of California during the Great Recession and beyond



SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Income is adjusted to 2010 dollars and normalized to account for family size. Sample size for cells, as well as further detail on calculations, is available in Technical Appendix C. Percentage changes measure the change from 2006–2007 to 2010. The 2006–2007 and 2008–2009 bars indicate the median income over the two years pooled for larger sample size.

Accordingly, the share of families that qualified as low income increased in most regions, and the share of middle-income families decreased (see Technical Appendix C for detailed tables). The only exception was San Diego County, where the share of low-income families decreased about 3 percentage points. The San Joaquin and Central Coast regions had the highest percentage of families with low incomes before the recession, and the downturn did not change that fact. Similarly, the San Francisco Bay Area had the lowest rate before the recession, and that did not change.

When estimates are adjusted for cost-of-living differences across regions, we find a much larger share of families to be low income. This is particularly true for high cost-of-living areas such as San Francisco, Los Angeles, and the Central Coast. For example, 52 percent of families in Los Angeles County were considered low income in 2010 after accounting for that area's cost of living, making it the region with the highest percentage of low-income families. In relatively lower cost-of-living areas such as the Sacramento region, accounting for cost of living did not have as big an effect on the percentage of families classified as low income.

Overall, the Great Recession did not significantly change California's regions in terms of family income characteristics. The areas with relatively higher median income before the Great Recession remained among the highest afterward. Regions where more families could be classified as low income likewise retained higher concentrations of low-income families.

The Great Recession in Historical Context

Family income tends to decline along with national income during a recession and rebound in a recovery. However, recessionary and recovery periods have not led to equal gains (or losses) across the income spectrum. As we have seen, the lower end of the income distribution saw much larger declines than the upper end during the Great Recession. How do these trends compare to those of earlier recessions?

All recessions have affected the lower end of the income distribution more than the higher end (Table 4). The 10th percentile of income fell 22 percent in the Great Recession, which makes the decline during the dot-com bust of the early 2000s look mild in comparison. Officially, the Great Recession lasted from 2007 to 2009, but we aim to capture here the full peak-to-trough cycle as reflected in the dating of all expansions and recession in Table 4.[29]

Table 4. California family income varies with the business cycle

	Incomes during economic growth (%)			Incomes during economic decline (%)			
	1983–1989	1993–2001	2004–2007	1980–1983	1989–1993	2001–2004	2007–2010
10th percentile	14	28	5	–18	–20	–3	–22
25th percentile	10	23	1	–11	–16	–4	–10
Median	11	16	6	–4	–13	–2	–11
75th percentile	12	9	5	0	–2	1	–8
90th percentile	18	16	7	0	–3	–1	–5
95th percentile	21	16	10	4	–2	0	–8

SOURCE: Authors' calculations from the Current Population Survey of the U.S. Census Bureau.

NOTES: Family income is adjusted to 2010 dollars and normalized to account for family size. See Technical Appendix A for details. These business cycle dates derive from peaks and troughs in the income distribution; for changes in income based on the official business cycle dates, see Technical Appendix C for alternative definitions.

However, compared to the recession of the early 1990s, the income declines at the low end of the distribution in the Great Recession do not look particularly severe. In fact, for the median of the distribution and 25th percentile, the early 1990s recession led to larger percentage declines in income. However, declines at the top end of the income distribution in the current recession are more than double the declines in the early 1980s and early 1990s recessions. It is possible that 2010 marks the low point in family income for the most current recession. However, it is also possible that future data will show further declines from those documented here. The early 1990s recession took roughly four years to hit its lowest mark; it remains to be seen whether the fourth year (2011) or beyond will bring the mark even lower for incomes in the Great Recession.

It is unclear whether the steep decline of incomes in the Great Recession will continue or incomes will start to recover by 2011.

On a per year basis, the Great Recession has caused steeper declines in income than did the early 1990s recession, at the lowest and highest ends of the distribution. The low end of the income distribution fell 7.2 percent per year in the Great Recession and 4.9 percent per year in the early 1990s recession (but a steeper 9 percent per year in the early 1980s recession). For the top of the distribution, declines in the Great Recession were much steeper than in any other recession in the past three decades. The 75th percentile fell 2.6 percent per year—five times the rate in the early 1990s. The 90th percentile fell 1.6 percent per year in the Great Recession—two times the rate.

Because the Great Recession is not clearly worse than earlier recessions, at least in the depth of the income declines experienced at some points in the distribution, we may be tempted to conclude that family income will recover as it has historically. But recovery periods have not always benefited income groups equally across the distribution. For example, in the economic growth period immediately before the Great Recession, income gains at the top of the distribution were larger than those at the bottom. This, combined with the fact that incomes at the lower end declined more than those at the top during the Great Recession, means that income at the lower levels has fallen much further behind income at the upper levels.

It is unclear whether the steep decline of incomes in the Great Recession will continue or incomes will start to recover by 2011. If, as historically, the top of the distribution recovers more quickly from the Great Recession, we can expect the gap between upper- and lower-income families to persist.

Conclusion

So far, the Great Recession has had the largest negative effects on family income at the lower end of the distribution. Between the peak of the business cycle in 2007 and the official end of the recession in 2009, the 10th percentile of income fell 15 percent—three times the decline at the median and six times the decline at the 90th percentile. This disparity in the size of the income shock during the Great Recession led to the largest gap between upper- and lower-income Californians in at least 30 years, with the 90th percentile of family income 11.9 times higher than that at the 10th percentile. This gap is larger in California than in the rest of the United States because the bottom of the income distribution fell more sharply than the top in California. By 2010, technically after the recession ended, the income picture only worsened. The low end of the income distribution fell another 7 percent and the upper end fell another 3 percent, bringing income inequality to a record high.

Not only has the income gap between lower- and upper-income families widened, but the percentage of middle-income families has also continued to shrink.

Not only has the income gap between lower- and upper-income families widened, but the percentage of middle-income families has also continued to shrink. By 2010, just less than a majority—49.7 percent—of California's families could be considered middle income, compared to 54.9 percent in the rest of the country. When adjusted for cost of living, only 47.9 percent of California's families could be considered middle income.

Roughly 90 percent of total family income comes from salary and wages. We find that both unemployment and underemployment contributed to declines in family income across the spectrum. Even for workers who were employed during the recession, median income fell—a result of decreases in the likelihood of both full-time employment and hours worked rather than of across-the-board declines in wages. These facts about unemployment and underemployment suggest that policies that create jobs and promote full-time employment, rather than those that target wage rates, are more likely to be effective in aiding the recovery of family income.

Trends in income across demographic groups and geographic areas did not substantially shift during the Great Recession. Rather, the recession tended to amplify preexisting differences. Across ethnic groups, black and Hispanic families, already with lower median income, experienced the largest declines during the Great Recession. Median income for Asian families had the smallest decline. Although the recession affected workers at all education levels, families with more highly educated workers were buffered somewhat from the downturn. The unemployment rate was the lowest and median family income was the highest among college-educated workers.

How does the Great Recession stack up against other recessions of the past three decades? Through 2010, there is no evidence of recovery in income across the distribution. Until we experience the trough of incomes, it is somewhat premature to compare the Great Recession to previous recessions. However, to date, it appears that the Great Recession has brought more severe declines in income than in previous recessions for most points in the distribution. Only at the middle and the 25th percentile do the declines appear to be in between the severity of those experienced in the recessions of the early 1980s and 1990s.

Labor market conditions in 2011 give some hint as to potential recovery across the distribution. Unemployment rates have continued to increase for low-income workers through 2011 but appear to be tapering off for workers in upper-middle- and high-income categories. We would thus expect, if anything, for 2011 to bring improvements at the upper end of the income distribution.

The long-term trends in income distribution suggest that incomes across the distribution generally rebound, despite severe downturns. However, those recoveries vary in swiftness and magnitude across the distribution. In most recessions over the last 30 years, the top percentiles of income rebounded relatively quickly and soon began gaining ground relative to prerecession levels. At the same time, growth in income at the middle of the distribution and below generally saw relatively slow increases, not even always reaching prerecession income levels. Most starkly, in the recession and recovery cycle since 1980, the bottom 10 percent of the income distribution in California has never fully caught up to initial levels.

We do not yet know the timing of the recovery from the Great Recession and how recovery will be shared across the income distribution, although both will play a role in the future of family economic well-being. However, long-term trends in the distribution of income are not only influenced by recessions and recoveries but are also tied to broader underlying economic trends. International trade, shifts in industry mix, changes in labor force participation, the role of unions, and international migration are a few of the factors that drive long-term trends in income distribution. The most important, however, is the increasing demand for skill in the labor market. Economic opportunity in the new economy is inextricably linked to education. Policy has a role to play in creating economic opportunity across the income distribution, particularly through education. Looking ahead, California may need to find innovative ways to promote opportunity, especially so that middle- and lower-income families do not get left behind. ●

Technical Appendices to this report are available on the PPIC website:
www.ppic.org/content/pubs/other/1211SBR_appendix.pdf

Notes

[1] Reed (2004); Reed (1999); Reed, Haber, and Mameesh (1996).

[2] CPS data measure households, families, and individuals. Households are made up of one or more families, and families are made up of one or more individuals. A single person living alone, for example, would be a family and household of one. For many, a family and household are the same, for example, a nuclear family living alone. Families pool resources in many ways. For example, if an adult family member becomes unemployed, another adult in the family unit may choose to enter the workforce or to work more hours.

[3] Thus, for example, the offsetting effect of Earned Income Tax Credit participation is not measured here.

[4] Other data sources, such as the CPS Merged Outgoing Rotation Group or the Survey of Income and Program Participation, are able to track families over time. However, these data are not recent enough, or do not include enough Californians, to fully describe changes experienced during the Great Recession.

[5] Note that although we do not focus on poverty in this report, the FPL is the key to understanding poverty-rate statistics. A family at or below the FPL is deemed to be "in poverty."

[6] All income figures in this paragraph are measured in 2009 dollars.

[7] To make the FPL consistent over time, the Census Bureau adjusts this level to reflect changes in the rate of inflation and standard of living. The FPL is arguably too simplistic a measure of economic well-being, as it refers only to pretax monetary income. Nonmonetary sources of income in the form of worker benefits and food stamps, for example, supplement income for many families. Indeed, the Census Bureau, in tandem with other agencies and researchers, have developed a new supplemental measure of poverty. This study focuses on the entire distribution of income rather than on poverty alone, but the supplemental poverty measure will be important to consider in future work. Researchers have used similar thresholds to define income categories in previous work, in particular for the three primary groups: low, middle, and high.

[8] Our breakdown of the middle-income group into three segments was selected so that the thresholds were roughly round and divided the middle group into roughly equal portions. The income cutoffs, in 2010 dollars, are: below $44,000 for low income, up to $66,000 for lower-middle income, up to $110,500 for central-middle income, up to $155,000 for upper-middle income, and above that for high income.

[9] The National Bureau of Economic Research defines the official business cycle dates based on peaks and troughs in economic activity, broadly defined. These economic activity indicators include real gross domestic product, employment, income, sales, and industrial production, among others. Because not all indicators peak and trough together, we may continue to see declines in employment and income, for example, well after other economic activity indicators have begun to rebound. For this reason, some effects of recessions may persist following the official trough date.

[10] CPS data do not allow us to measure the very highest incomes in the distribution. Other researchers have used tax return data to study the top 1 percent of the income distribution, and that research shows the marked increasing concentration of wealth at the very top of the income distribution. For example, Piketty and Saez (2003) find that the share of income earned by the top 1 percent of the distribution is higher now than before World War II.

[11] The base year in Figure 1 is important. If we choose a different starting point, the picture could look very different. Note that 1980 was a near-peak year in the business cycle, meaning that income levels were relatively high. It was followed soon after by a recession. However, by comparing the y-axis values for any two points, we can understand changes across years irrespective of the base year. For example, if the y value is the same for two points, then there was no difference in income in those two years. Also, one can recover the percentage change between any two years by taking the difference (% change_t – % change_{t+x}) and dividing by 1 + % change_t.

[12] These metrics of inequality—the gap between various points in the income distribution—are standard in the research literature. For example, see seminal papers such as Juhn, Murphy, and Pierce (1993) and recent work such as Autor, Katz, and Kearney (2008).

[13] The inequality measures are at the highest level since at least 1967, when the CPS data began to be collected.

[14] For a detailed discussion of cost-of-living adjustments, see Technical Appendix A. The adjustment takes into account only differences in housing costs.

[15] See Technical Appendix C for a comparable figure on income categories for the rest of the United States.

[16] Bureau of Labor Statistics, Local Area Unemployment Statistics, and Current Population Survey official estimates. See Technical Appendix C for the full time series on unemployment rates in California and the United States.

[17] Those recessions occurred in the early 1980s, the early 1990s (actually a "double-dip" recession precipitated by Black Monday of 1987), and early 2000s (the dot-com bust). (See Technical Appendix C.)

[18] National Bureau of Economic Research Business Cycle Dating Committee statement, September 20, 2010, dates the Great Recession from December 2007 to June 2009.

[19] The Legislative Analyst's Office in California estimates that the unemployment rate in the state will not recover to prerecession levels before 2015. See Kolko (2011) and a similar forecast for the United States from Federal Reserve chairman Ben Bernanke (2011).

[20] Note that the CPS data do not allow us to measure income shares for the high-income group. To protect the confidentiality of respondents, the CPS replaces top income values with a set value or "top-code." Any income above the top-coded value is thus unknown to the researcher.

[21] Burkhauser and Larrimore (2011).

[22] We measure these statistics over two-year periods to obtain more reliable estimates. We thus compare the two years of the Great Recession, 2008–2009, to the two years before, 2006–2007. Furthermore, because these estimates are on a per worker basis, they are not normalized to account for family size, as previous family income estimates were. However, dollar amounts are adjusted to 2009 levels. Workers are defined as individuals who report working at least one week of the year. See Technical Appendix C for the annual estimates of these measures as well as similar statistics pertaining to workers in the rest of the United States.

[23] Wage rates are typically "sticky," or slow to adjust, and employers find it hard to lower wages and salaries even if they experience economic hardships. However, the nominal wages received by an employee do increase or decrease with the inflation rate. In an inflationary period, employers can pay less in real wages despite the fact that nominal wages do not change. And vice versa. Since inflation was extremely low during the Great Recession, and since employers have a hard time decreasing wages, they are more likely to respond by adjusting worker hours or the number of employees. So we would expect to see more movement in employment measures than in wage rates.

[24] Burkhauser and Larrimore (2011).

[25] Recall that these income statistics are adjusted to make families comparable regardless of their size. Thus, median-income estimates for families with a single head and no children are directly comparable to those for single-headed families with children. These estimates reveal that even on a per person basis, single families with no children earn more than single families with children. And married families with no children earned more on a per person basis than any other type of family.

[26] Single-parent families tend to rely on government sources of income more heavily than families with children and two earners. See Technical Appendix C for unemployment details.

[27] These regions are measured as follows: San Francisco Bay Area includes the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, Solano, Sonoma, San Mateo, and Santa Clara; Los Angeles County, Orange County, and San Diego County are measured solely by the composite county; the Inland Empire is composed of Riverside and San Bernardino Counties; the Central Coast is composed of Santa Barbara, Monterey, and San Luis Obispo Counties; the Sacramento region includes the counties of Sacramento, El Dorado, Placer, and Yolo; and San Joaquin is composed of Fresno, Kern, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties.

[28] See Technical Appendix C for unemployment statistics by region.

[29] See Technical Appendix C for a calculation of changes across the income distribution based on official business cycle dates.

References

Autor, David, Lawrence Katz, and Melissa Kearney. 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *The Review of Economics and Statistics* 90 (2): 300–323.

Bernanke, Ben. 2011. Testimony Before the Committee on the Budget, U.S. House of Representatives, Washington, D.C., February 9.

Burkhauser, Richard, and Jeff Larrimore. 2011. "How Changes in Employment, Earnings, and Public Transfers Make the First Two Years of the Great Recession (2007–2009) Different from Previous Recessions and Why It Matters for Longer Term Trends." US 2010 Project, Russell Sage Foundation and Brown University.

Daly, Mary, and Heather Royer. 2000. "Cyclical and Demographic Influences on the Distribution of Income in California." *FRBSF Economic Review*.

Juhn, Chinhui, Kevin Murphy, and Brooks Pierce. 1993. "Wage Inequality and the Rise in Returns to Skill." *Journal of Political Economy* 101 (3): 410–442.

Kolko, Jed. 2011. "The California Economy: Employment in 2010." Just the Facts, Public Policy Institute of California.

National Bureau of Economic Research. 2010. Business Cycle Dating Committee memo, September 20. Available at http://www.nber.org/cycles/sept2010.html.

Piketty, Thomas, and Emmanuel Saez. 2003. "Income Inequality in the United States, 1913–1998." *Quarterly Journal of Economics* 118 (1): 1–41.

Reed, Deborah. 1999. *California's Rising Income Inequality: Causes and Concerns*. San Francisco: Public Policy Institute of California.

Reed, Deborah. 2004. "Recent Trends in Income and Poverty." *California Counts* 5, No. 3, Public Policy Institute of California.

Reed, Deborah, Melissa Glenn Haber, and Laura Mameesh. 1996. *The Distribution of Income in California*. San Francisco: Public Policy of California.

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