



**Household Income Trends:  
August 2012**

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### **Note**

This publication is a monthly household income report for August 2012 based on data derived by Sentier Research from the Current Population Survey (CPS), the source of the nation's official statistics on employment and unemployment. It does not contain any information on the characteristics of households. Readers who are interested in income changes by detailed household characteristics should consult our recent report, "Changes in Household Income During the Economic Recovery: June 2009 to June 2012," which is available on our website ([www.sentierresearch.com](http://www.sentierresearch.com)). This earlier report focuses on household income changes during the recession that lasted from December 2007 to June 2009, and three full years of "economic recovery" lasting from June 2009 to June 2012. It shows household income changes during the recovery by a wide variety of demographic, social, and economic characteristics of households.

### **Summary of Findings**

According to new data derived from the monthly Current Population Survey (CPS), real median annual household income decreased by 1.1 percent (\$543) between July 2012 and August 2012, from \$51,221 to \$50,678.

(Income amounts in this report are before-tax money income and have been adjusted for inflation; income amounts are expressed in August 2012 dollars and have been seasonally adjusted, unless otherwise noted.)

This decline in real median annual household income of 1.1 percent marks the first statistically significant change in the median since the increase of 0.7 percent in May of this year. With the exception of that increase, all of the other month-to-month changes in real median annual household income since January 2012 have not been statistically significant. Prior to the beginning of this year, there was a decline in real median annual household income of 1.3 percent from December 2011 to January

2012. That decline followed several successive monthly increases in real median annual household income that occurred between August 2011 and December 2011.

The August decline in real median annual household income is indicative of a struggling economy. Even though we are technically in an economic recovery, real median annual household income is having a difficult time maintaining its present level, much less “recovering.” As we have noted in our previous reports, we are watching this household income series closely for signs of any sustained directional movement.

The August reading on the labor market from the U.S. Bureau of Labor Statistics indicates a slightly improving situation with the exception of the duration of unemployment. The unemployment rate in August 2012 was 8.1 percent, down from 8.3 percent in July 2012. There appears to be a worsening in the median duration of unemployment, which increased from 16.7 weeks in July 2012 to 18.0 weeks in August 2012. The broader measure of employment hardship, which includes the unemployed, marginally attached workers (of which discouraged workers are a subset), and persons working part-time for economic reasons, declined slightly from 15.0 percent in July 2012 to 14.7 percent in August 2012.

One factor that led to the decline in real median annual household income between July 2012 and August 2012 was an increase in the Consumer Price Index (CPI) of 0.6 percent. Although there are many factors affecting changes in real median annual household income over time, changes in consumer prices are a major contributor.

The CPI has displayed a very uneven pattern of movement over the past year. Prior to the increase in the CPI of 0.6 percent between

July 2012 and August 2012, it followed a downward trend from April 2012 to July 2012: April 2012 and May 2012 (-0.1 percent), May 2012 to June 2012 (-0.1 percent), and June 2012 and July 2012 (-0.2 percent). This is in marked contrast to the period prior to April 2012. There were four consecutive monthly increases in the CPI dating from the end of the last year: December 2011 to January 2012 (0.4 percent), January 2012 to February 2012 (0.4 percent), February 2012 to March 2012 (0.8 percent), and March 2012 to April 2012 (0.3 percent). These four monthly increases in the CPI followed three consecutive monthly declines in the CPI that occurred between September 2011 and December 2011.

It is obvious that recent trends in prices have been heavily influenced by the sharp rise, subsequent fall, and sharp rise again in the price of fuel at the pump. Fuel prices increased very steeply during August 2012, and they have maintained their elevated level during September 2012, at least up to the writing of this report.

Because all of the income amounts in this series are shown after adjustment for changes in the CPI, the recent increase in prices has overpowered the slight improvement in the labor market when tracking monthly household income.

The median annual household income in August 2012 can be put into broader perspective by a comparison with previous levels of household income dating back to the start of the last decade. The August 2012 median annual household income of \$50,678 was 5.7 percent lower than the median of \$53,718 in June 2009, the end of the recent recession and beginning of the “economic recovery.” The August 2012 median was 8.1 percent lower than the median of \$55,131 in

December 2007, the beginning month of the recession that occurred more than four years ago. And the August 2012 median was 9.0 percent lower than the median of \$55,688 in January 2000, the beginning of this statistical series. These comparisons demonstrate how significantly real median annual household income has fallen over the past decade, and how much ground needs to be recovered to return to income levels that existed more than ten years ago.

The Household Income Index (HII) shows the value of real median annual household income in any given month as a percent of the base value at the beginning of the last decade (January 2000 = 100.0 percent). The HII for August 2012 stood at 91.0, down from 92.0 in July 2012, and lower than the December 2011 reading of 92.5. Before the recent decline and a period of very little change back to the beginning of this year, the HII had increased steadily from August 2011 to December 2011: 89.3 in August, 90.5 in September, 91.4 in October, 92.1 in November, and 92.5 in December.

Three employment hardship measures—the unemployment rate, the median duration of unemployment, and a broad measure of employment hardship that groups the unemployed, marginally attached workers, and part-time workers who want full-time work—are contrasted against the HII in Figures 1, 2, and 3 below, respectively.

As shown in Figure 1, between July 2012 and August 2012, the unemployment rate declined slightly from 8.3 to 8.1 percent. The unemployment rate is still much lower than the August 2011 level (9.1 percent), the month when the HII was at its lowest reading (89.3).

As shown in Figure 2, between July 2012 and August 2012, the median number of

weeks unemployed increased from 16.7 weeks to 18.0 weeks. Even with the recent rise, the median number of weeks unemployed is still significantly lower than the August 2011 level (21.8 weeks).

As shown in Figure 3, the broad measure of employment hardship in August 2012 (14.7 percent) was slightly lower than in July 2012 (15.0 percent). This broad measure of employment hardship is also significantly lower than the August 2011 level (16.2 percent).

Other economic factors, such as changes in average hourly earnings and average hours worked per week, have also had an effect on household income levels. At the start of the recession in December 2007, the average hourly earnings (expressed in August 2012 dollars) for all private employees were \$23.31 per hour. After taking inflation into account during the recession and the economic recovery, average hourly earnings increased to \$23.52 by August 2012. The average number of hours worked per week for all private employees was 34.6 hours in December 2007, falling to a low of 33.8 hours in June 2009, and then rebounding to 34.4 hours by August 2012 (all figures are seasonally adjusted from the U.S. Bureau of Labor Statistics based on the Current Employment Statistics survey).

The Nation's official estimates of household income and poverty are released once a year by the U.S. Census Bureau. Official data derived from the 2012 Current Population Survey Annual Social and Economic Supplement (CPS ASEC) that relate to annual income received during calendar year 2011 were released by the U.S. Census Bureau on September 12, 2012. These are the most recent statistics on annual income that are currently available from the U.S. Census Bureau. Updated income estimates

for calendar year 2012 will not be released until sometime next Fall.

While the U.S. Census Bureau provides the most accurate measures of both the level and change in household income, the new series presented in this report provides an interim measure that tracks income changes on a monthly basis, an attribute that is especially

important during periods of economic instability. As demonstrated in this and our previous reports, the new monthly series has the ability to track household income changes during the specific months of important economic events, such as the recession and the economic recovery, that do not coincide neatly with calendar year boundaries.

## Data Sources and Estimation Methods

This study is based on data collected in the Current Population Survey (CPS), the same household survey used to derive the official monthly unemployment rate. Data have been compiled from each monthly survey taken since January 2000 (as of August 2012, 152 surveys in total). Each of these surveys collected data for a nationally representative sample of more than 50,000 interviewed households and their respective members (approximately 135,000 per month). The survey collects the detailed information needed to determine the employment characteristics of all civilians age 16 years old and over and to compute the official unemployment rate. It also collects key demographic and social characteristics for all household members, including children. Some of these are as follows:

- Age
- Gender
- Relationship to householder (i.e. spouse, own child, grandchild, nonrelative, etc.)
- Race and ethnicity
- Educational attainment
- Veteran's status (era of past membership in the armed forces)
- Presence of disabilities
- Citizenship
- Country of birth

Estimates of household income from the survey are based on a single question that asks respondents to report the total money income received by the household during the previous 12-month period. The definition of income used in the survey includes the following:

- Wages and salary
- Nonfarm self-employment income

- Farm self-employment income
- Social Security and Supplemental Security Income
- Interest, dividends, net rental income, and royalties
- Cash public assistance (federal and state)
- Unemployment compensation and workers' compensation
- Retirement income from pensions, annuities, other retirement plans
- Veterans' pensions and compensation
- Child support and alimony
- Other cash income **excluding** capital gains or lump sum, one-time amounts

The total amount of household income before taxes is recorded in one of 16 categories as shown below:

- Under \$5,000
- \$5,000 to \$7,499
- \$7,500 to \$9,999
- \$10,000 to \$12,499
- \$12,500 to \$14,999
- \$15,000 to \$19,999
- \$20,000 to \$24,999
- \$25,000 to \$29,999
- \$30,000 to \$34,999
- \$35,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 to \$59,999
- \$60,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 and over

The total household income estimates in this report are based on a composite moving average. Each month 25 percent of the sample households are new while 75 percent were also interviewed in the previous

month. As the household income question is asked only for the “new” households each month, statistics derived from the full sample represent a moving average covering the 4-month period prior to the interview month. The household income estimates in this report reflect all sample households. We have determined that estimates based solely on the 25-percent sample entering in a single month exhibit an unacceptable level of sampling variability.

The raw data collected for each household member in the survey must be aggregated and summarized at the household level in order to generate the household statistics underlying this analysis. Householders are identified in order to compute statistics that relate to characteristics of the householder. Counts of the number of household members, number of children, and number of earners are computed by examining each household member’s detailed information. Missing responses to the question on household income are imputed using statistical matching techniques in order to adjust for any nonresponse bias. Procedures for imputing missing responses are based on the same methodology used by the U.S. Census Bureau for the Annual Social and Economic Supplement (CPS ASEC), the source for official estimates of annual income, poverty, and health insurance coverage. There are some reporting differences when asking for total household income as compared to using the CPS ASEC supplemental questionnaire, which asks a detailed series of questions on the receipt of income during the previous calendar year. We have made adjustments to correct for bias caused by these differences. The U.S. Census Bureau’s estimates for calendar year 2011 were released on September 12, 2012. That release does not include any monthly trend data, and does not report on income developments during 2012.

All statistics shown in this analysis are based on weighted sample data. The survey for each month includes a sample weight for each household. The sum of these weights across all sample households provides a national estimate of the total number of households existing for that month. When summed these weights also provide estimates of the number of households by characteristics such as race, age, gender, presence of unemployed, etc.

Estimates shown in this report may differ from actual values because of both sampling variability and nonsampling error. Sampling variability occurs because responses are obtained from a sample of the population (50,000 interviewed households) rather than from a full census. Nonsampling error can occur from a variety of factors. Households may report incorrect information when answering questions about the total amount of household income received during the past 12 months prior to the interview. When a respondent forgets the exact dates for a sequence of events this can result in a known survey bias called “telescoping,” in which the reporting of the events is telescoped either forward or backward.

The telescoping phenomenon may be especially relevant in situations where household members become unemployed or find a job after a significant period of unemployment. For example, a respondent who recently found a job following a long period of unemployment may erroneously include the annual salary from the new job when responding to the household income question in the CPS that should be restricted only to income received during the 12-month period prior to the survey month. Similarly, respondents with Social Security income may use their current monthly Social Security benefit to compute annual household income during the previous 12-

month period even though the current monthly amount reflects the first month following a cost-of-living adjustment.

The Consumer Price Index (CPI-U) for all urban consumers has been used to make adjustment for changes in prices where noted in the tables and text of the report.

The Household Income Index (HII) has been seasonally adjusted to reduce seasonal differences in the reporting of household income. Various factors may contribute to seasonal difference in the way households report their incomes in the CPS. Earlier studies by the U.S. Census Bureau have shown that reports of household income tend to rise as the survey month approaches the April tax-filing period. This trend, while apparent in surveys of the 1980's and early 1990's, is less pronounced in more recent years. Seasonal adjustments are made using the X-12-ARIMA software. This software was developed by the U.S. Census Bureau and is the same software used to create adjustment factors for monthly employment and unemployment series released by the U.S. Bureau of Labor Statistics.

The household income estimates in this report reflect modifications made as part of annual benchmarking adjustments that refine the procedures used for imputing missing survey responses to the income questions, improve the methods used for estimating the

level of household income, and update the factors used for making seasonal adjustments to the time series data. These modifications were introduced into the estimates beginning with the January 2012 monthly report. Therefore, the income estimates in this report may differ slightly from those that appeared in reports prior to January 2012. These various adjustments result in a trend line in real median annual household income, and the corresponding Household Income Index (HII), that closely resembles the previously published trend line. (See the January 2012 monthly report for a comparison of the trend lines.) Similar benchmarking adjustments will be made in January of each year as part of an effort to introduce continuous improvements into the household income data series.

The August 2012 estimates reflect new population controls based on the 2010 Decennial Census results. These controls are used to "weight" the survey observations so that they reflect the population by detailed demographic subgroups. Introduction of the new survey weights to reflect the latest Census results is standard operating procedure for the CPS. Traditionally their introduction has had only very minor effects on comparisons of median incomes but may have some small effects on estimated numbers of households. The new population controls were introduced in January 2012 for the CPS.



## About the Authors

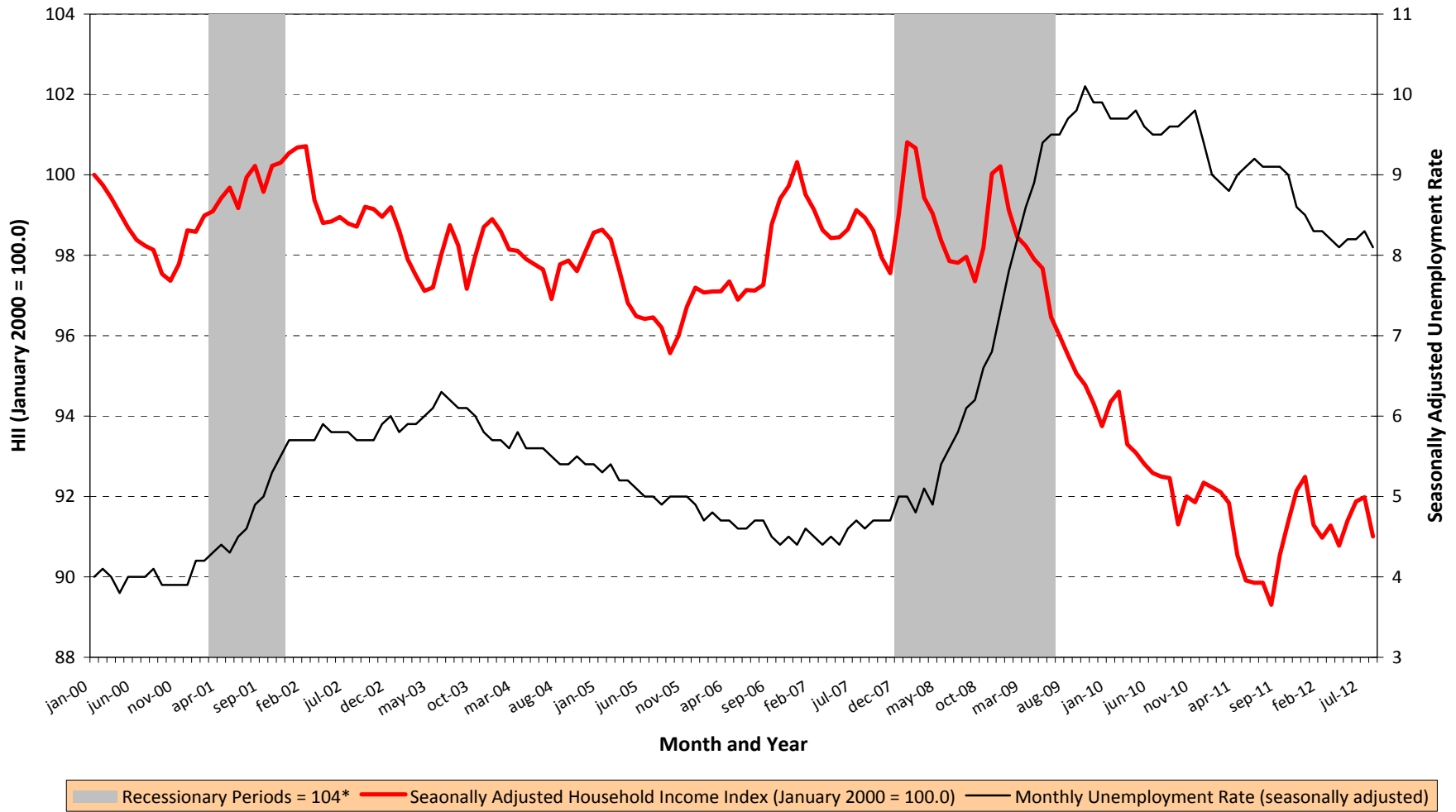
**Gordon Green** is a former Chief of the Governments Division at the U.S. Census Bureau and a member of the Senior Executive Service (SES). For many years at the U.S. Census Bureau, he directed work on the Nation's official income and poverty statistics program. He received a Ph.D. in economics from The George Washington University in 1984. He is author of the book, *Making Your Education Work for You* (Forge, 2010), which shows students how to make top grades in high school and college and engage in effective job planning. He is also author of the book, *How to Get Straight A's in School and Have Fun at the Same Time* (Forge, 1999), which is intended for younger students. Additional information is available at: [www.gordonwgreen.com](http://www.gordonwgreen.com)

**John Coder** is a former Chief of the Income Statistics Branch at the U.S. Census Bureau. While at the U.S. Census Bureau he directed collection and processing of income and related data collected in the March Current Population Survey (CPS) and was instrumental in developing new methods for imputing missing survey responses. He also was founder of the U.S. Census Bureau's Small Area Income and Poverty Estimates Program. He played a key role in developing the Luxembourg Income Study, which is a data center for making cross-national comparisons, available at the website: [www.lisdatacenter.org](http://www.lisdatacenter.org)

The authors gratefully acknowledge the valuable assistance provided by Anne Fengyan Shi in preparing this report. She received a Ph.D. in government from Georgetown University in 1999, and has been a social science researcher ever since.

Figure 1.

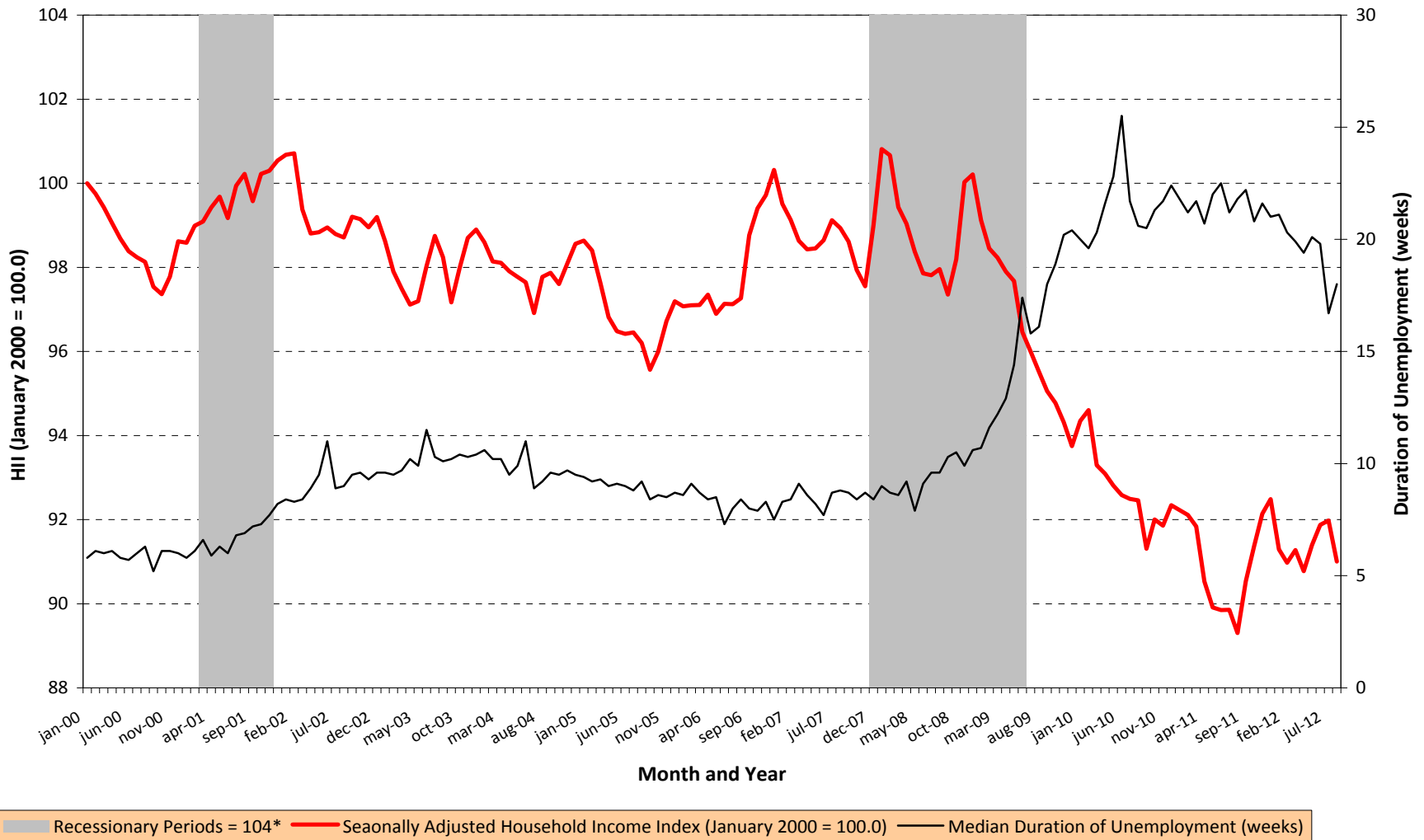
Median Household Income Index (HII) and Unemployment Rate by Month: January 2000 to August 2012



Sources: For income data: Sentier Research, LLC estimates of annual household income derived from the monthly Current Population Survey (CPS) conducted by the U.S. Census Bureau; for the unemployment rate and the CPI-U: the U.S. Bureau of Labor Statistics.

Figure 2.

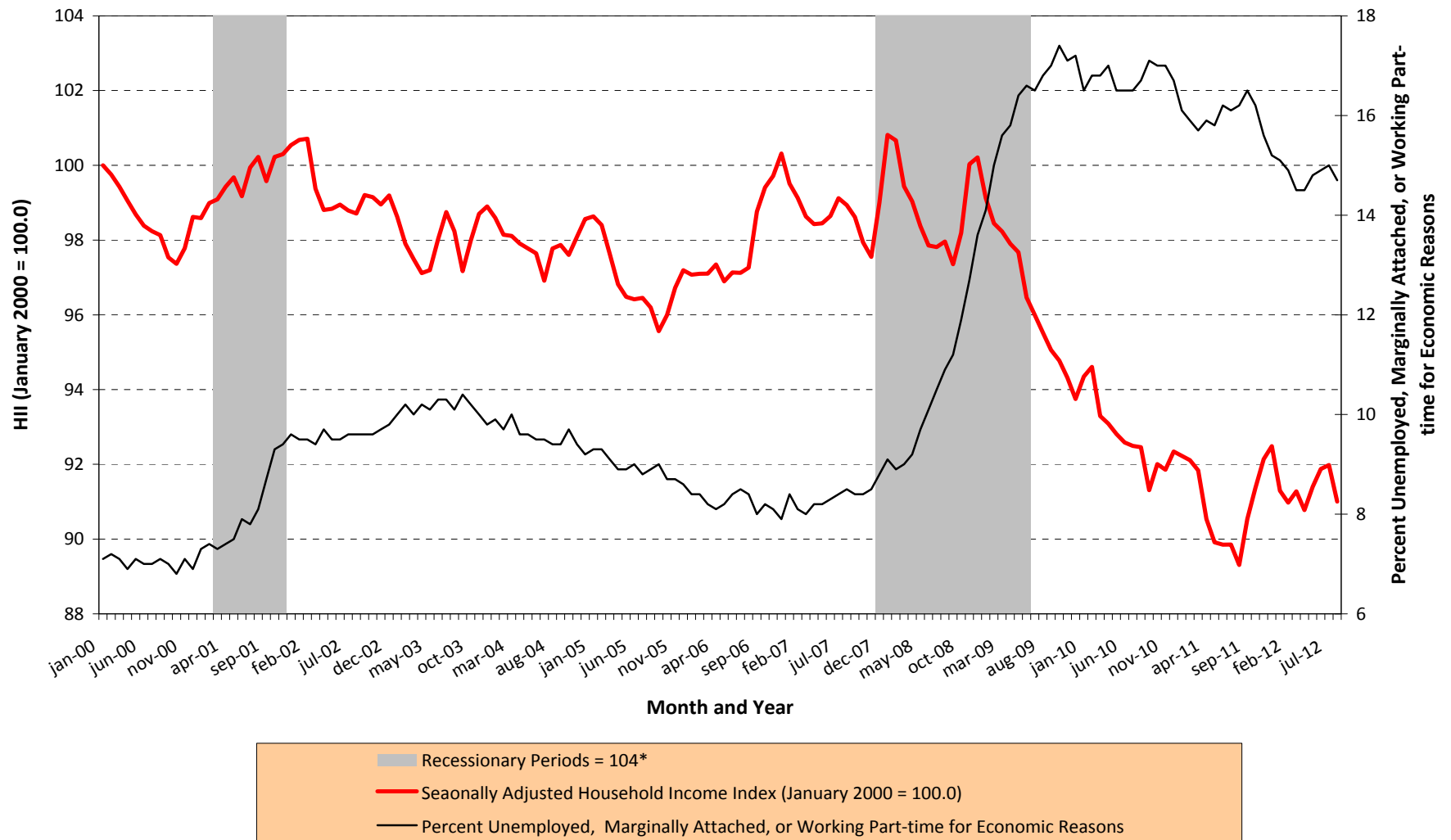
Median Household Income Index (HII) and Median Duration of Unemployment by Month, January 2000 to August 2012



Sources: For income data: Sentier Research, LLC estimates of annual household income derived from the monthly Current Population Survey (CPS) conducted by the U.S. Census Bureau; for the median duration of unemployment and the CPI-U: the U.S. Bureau of Labor Statistics.

**Figure 3.**

**Median Household Income Index (HII) and Percent Unemployed, Marginally Attached, or Working Part-time for Economic Reasons by Month, January 2000 to August 2012**



Sources: For income data: Sentier Research, LLC estimates of annual household income derived from the monthly Current Population Survey (CPS) conducted by the U.S. Census Bureau; for the percent unemployed, marginally attached, or working part-time for economic reasons and the CPI-U: the U.S. Bureau of Labor Statistics.