



**Household Income Trends:
October 2013**

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**Gordon Green and John Coder
Sentier Research, LLC**

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Note

This report on median household income for October 2013 is based on data derived from the monthly Current Population Survey (CPS), the source of the nation's official statistics on employment and unemployment. This report 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, "Household Income on the Fourth Anniversary of the Economic Recovery: June 2009 to June 2013," available on our website (www.sentierresearch.com).

Summary of Findings

According to new data derived from the monthly Current Population Survey (CPS), median annual household income in October 2013 was \$52,299, not statistically different than the September 2013 median of \$52,498.

(Income amounts in this report are before-tax money income and have been adjusted for inflation; income amounts are expressed in October 2013 dollars and have been seasonally adjusted, unless otherwise noted.)

Real median annual household income has shown some improvement over the past two years since the low point in our household income series that occurred in August 2011. Median income in October 2013 (\$52,299)

was not significantly different than October 2012 (\$52,082), but was 2.7 percent higher than in August 2011 (\$50,910). The period since August 2011 has been marked by an uneven, but generally upward trend in the level of real median annual household income. While many of the month-to-month changes in median income during this period have not been statistically significant, there have been two notable decreases and one notable increase. Median income decreased by 1.7 percent between December 2011 (\$52,246) and January 2012 (\$51,363). There was a decrease in median income of 1.1 percent between January 2013 (\$52,226) and February 2013 (\$51,633), which was the first significant decline since the change

recorded between December 2011 and January 2012. Median income increased by 0.7 percent between May 2013 (\$51,939) and June 2013 (\$52,291), which marked the first statistically significant increase in the median in well over a year. The cumulative effect of the various month-to-month changes since August 2011 resulted in the income improvement noted above. (See Figure 1.)

By definition, changes in consumer prices have a direct effect on the measured level of real median annual household income. Monthly variations in the CPI in recent times have been driven mainly by changes in energy prices, which have been volatile. The month-to-month changes in the CPI since August 2011 span a broad range of values, from a low of -0.4 percent between March 2013 and April 2013, to a high of 0.7 percent between January 2013 and February 2013. Large increases in the CPI create a headwind for changes in real median annual household income, because the median would need to increase at the high rate of inflation just to break even.

Real median annual household income in October 2013 can be put into broader perspective by comparisons with previous levels of household income dating back to the start of the last decade. The October 2013 median income of \$52,299 was 4.4 percent lower than the median of \$54,680 in June 2009, the end of the recent recession and beginning of the “economic recovery.” (Since the recession ended consumer prices have increased by 8.9 percent, creating a sizable “headwind” for changes in median annual household income.) The October 2013 median was 6.1 percent lower than the median of \$55,686 in December 2007, the beginning month of the recession that occurred more than five years ago. And the October 2013 median was 7.2 percent lower

than the median of \$56,351 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 a median income level that existed more than ten years ago.

The October reading on the labor market from the U.S. Bureau of Labor Statistics indicates a slightly worsened situation compared to September, although some of the measured changes are not statistically significant. The official unemployment rate in October 2013 was 7.3 percent, not significantly different from the 7.2 percent rate in September 2013. The median duration of unemployment was 16.3 weeks in October 2013, the same level as in September 2013. 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 was 13.8 percent in October 2013, up from 13.6 percent in September 2013.

If we focus on the longer time period since real median annual household income in our series reached the low point, from August 2011 to October 2013, the labor market trends show a definite improvement. The official unemployment rate declined from 9.1 percent in August 2011 to 7.3 percent in October 2013. The median duration of unemployment declined from 21.8 weeks in August 2011 to 16.3 weeks in October 2013. And 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 from 16.2 percent in August 2011 to 13.8 percent in October 2013.

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 October 2013 stood at 92.8 compared to 98.8 in December 2007, when the “great recession” began, and 97.0 in June 2009, when the “economic recovery” subsequently began. The HII in August 2011 was 90.3 compared to 92.8 in October 2013. The HII had increased steadily from August 2011 (the low point) to December 2011: 90.3 in August, 91.0 in September, 91.6 in October, 91.8 in November, and 92.7 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, at the back of this report. In the discussion that follows, we highlight trends in these three employment hardship measures for five important time periods: January 2000 (the beginning of our household income statistical series), December 2007 (the beginning of the great recession), June 2009 (the beginning of the economic recovery), August 2011 (when the HII reached its lowest level), and October 2013 (the latest reading).

As shown in Figure 1, the official unemployment rate in January 2000 was 4.0 percent, rose to 5.0 percent in December 2007, continued to rise to 9.5 percent in June 2009, fell to 9.1 percent in August 2011, and stood at 7.3 percent in October 2013.

As shown in Figure 2, the median duration of unemployment in January 2000 was 5.8 weeks, rose to 8.4 weeks in December 2007,

continued to rise to 17.4 weeks in June 2009, rose further to 21.8 weeks in August 2011, and stood at 16.3 weeks October 2013.

As shown in Figure 3, the broad measure of employment hardship in January 2000 was 7.1 percent, rose to 8.8 percent in December 2007, continued to rise to 16.6 percent in June 2009, fell to 16.2 percent in August 2011, and stood at 13.8 percent in October 2013.

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 October 2013 dollars) for all private employees were \$23.50 per hour. After taking inflation into account during the recession and the economic recovery, average hourly earnings increased to \$24.10 by October 2013. 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 October 2013 (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 2013 Current Population Survey Annual Social and Economic Supplement (CPS ASEC) that relate to annual income received during calendar year 2012 were released by the U.S. Census Bureau on September 17, 2013. These are the most recent statistics on annual income that are currently available from the U.S. Census Bureau. The U.S. Census Bureau will release updated income estimates for

calendar year 2013 sometime during the Fall of 2014. 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, such as

those we have experienced. 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 October 2013, 166 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 income estimates for calendar year 2012 were released on September 17, 2013. That release does not include monthly trend data, and therefore

does not report on any income developments during 2013.

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. We have used the seasonally adjusted CPI to make these adjustments.

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 were implemented in January 2013, which 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. In addition, beginning with January 2013 we

are using the seasonally adjusted Consumer Price Index for all urban consumers (CPI-U) to make adjustments for changes in prices throughout the entire household income data series back to January 2000. (All estimates prior to January 2013 were based on the not seasonally adjusted CPI-U.) 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. 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 estimates in this report 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.

Each January the U.S. Census Bureau makes additional adjustments to the population controls in the Current Population Survey. This means the sample weights are revised so that estimates from the CPS agree with pre-specified national population totals by age, sex, race, and Hispanic origin and with state level totals by age, sex, and race. The estimates in this report reflect those adjustments.

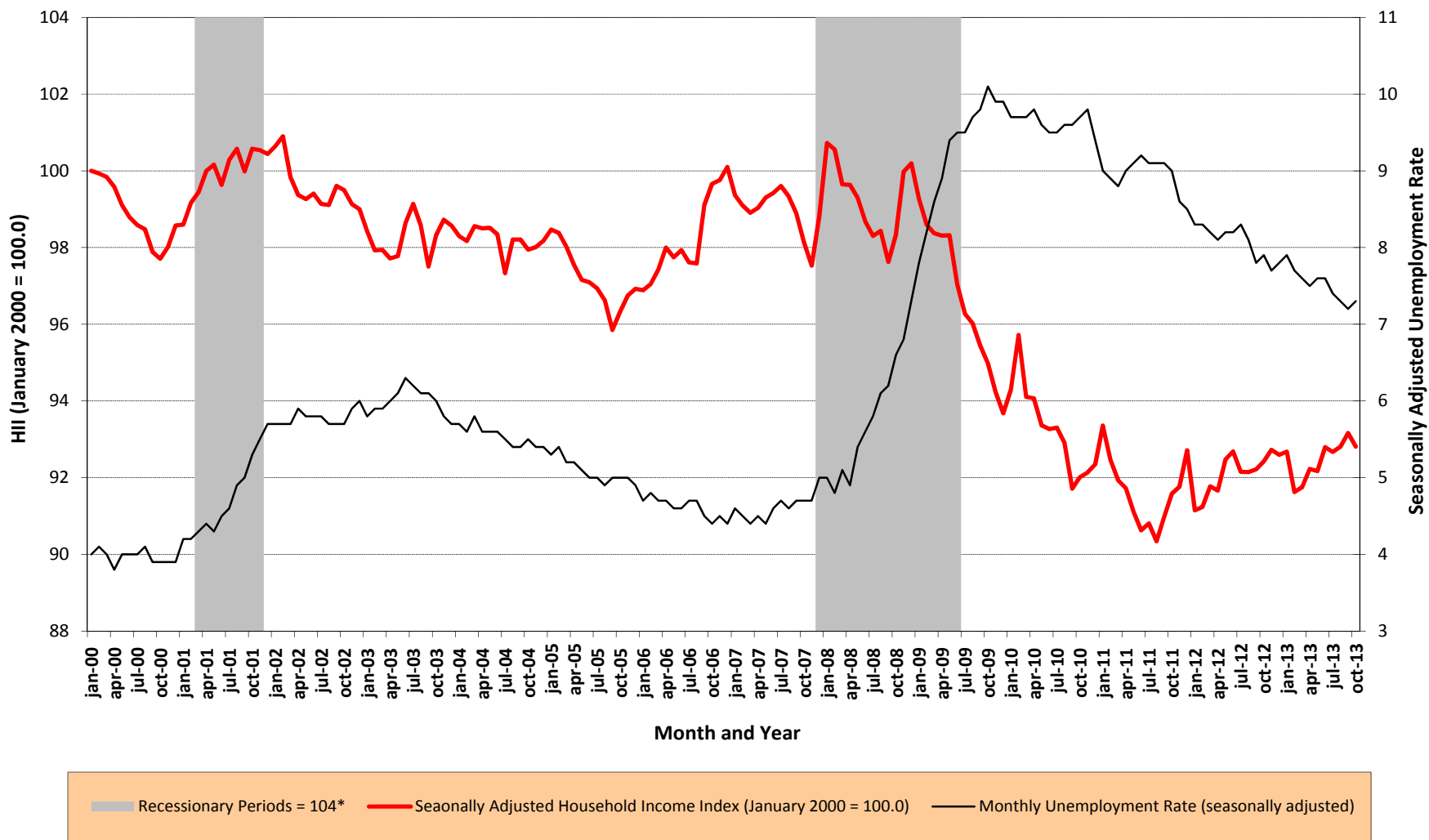
About the Authors

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 books, *How to Get Straight A's in School and Have Fun at the Same Time* (Forge, 1999), which is intended for younger students, and *Getting Straight A's* (Lyle Stuart, 1985).

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

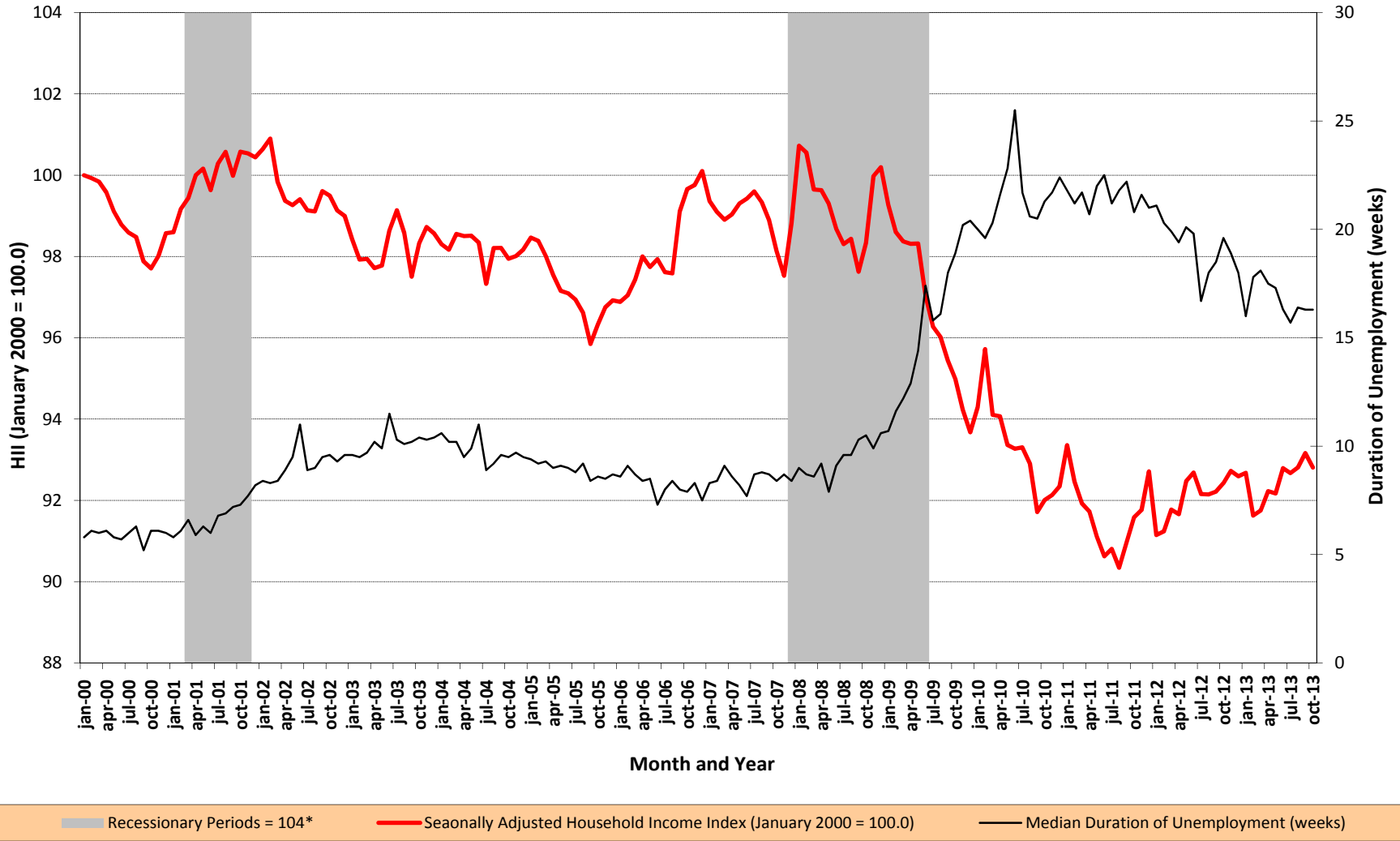
The authors gratefully acknowledge the valuable assistance provided by Anne Fengyan Shi in preparing this report. She received a Ph.D. in government from Georgetown University in 1999, and has been a social science researcher ever since.

Figure 1.
Median Household Income Index (HII) and Unemployment Rate by Month: January 2000 to October 2013



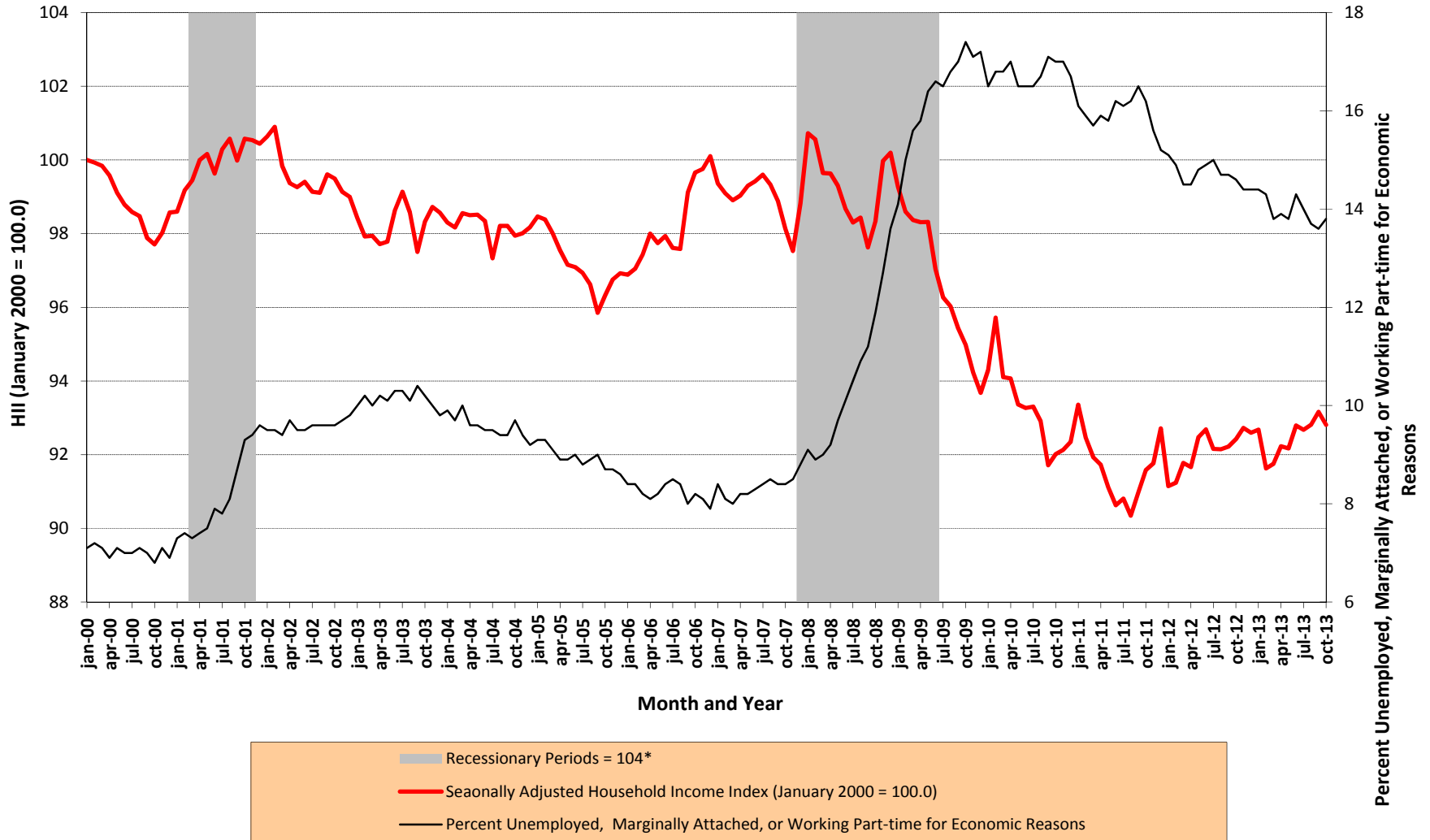
Sources: For income data: Sentier Research, LLC estimates of annual household income derived from the monthly Current Population Survey (CPS) conducted by the U.S. Census Bureau; for the unemployment rate and the CPI-U: the U.S. Bureau of Labor Statistics.

Figure 2.
Median Household Income Index (HII) and Median Duration of Unemployment by Month, January 2000 to October 2013



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 October 2013



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.