

## Consumer Price Index (CPI) Conversion Factors to Convert to 2010 Dollars

Using the CPI-U-RS series, which starts 1947, an experimental CPI measure (see explanation below),  
and CPI-U-X1, which applies the post-1982 CPI to the period 1950-1982

(either can be used when exact comparisons are needed between years during the period starting 1947)

To convert dollars of a year to 2010 dollars, DIVIDE the dollar amount of that year by the conversion factor (CF) for that year  
For example, for CPI-U-RS \$1000 dollars of 1948 = \$7752 dollars of 2010 (\$1000 / 0.129); suggest rounding to \$7750.  
For example, for CPI-U-X1 \$1000 dollars of 1954 = \$7462 dollars of 2010 (\$1000 / 0.134); suggest rounding to \$7460.

**Note:** To reverse the process, that is, to determine what a 2010-dollar amount would be in the dollars of another year, simply multiply the 2010 amount by the conversion factor of that year. For example, \$1000 2010 dollars would be about \$120 in 1947 (\$1000 x 0.120), using CPI-U-RS.

As shown here, it is recommended that numbers be **ROUNDED** to no more than three significant digits.

Year	CF RS	CF X1	Year	CF RS	CF X1	Year	CF RS	CF X1	Year	CF RS	CF X1
1947	0.120		1966	0.174	0.161	1985	0.517	0.493	2004	0.866	0.866
1948	0.129		1967	0.179	0.166	1986	0.527	0.503	2005	0.895	0.896
1949	0.128		1968	0.186	0.173	1987	0.545	0.521	2006	0.925	0.925
1950	0.129	0.120	1969	0.195	0.181	1988	0.565	0.543	2007	0.951	0.951
1951	0.140	0.130	1970	0.204	0.189	1989	0.589	0.569	2008	0.988	0.987
1952	0.142	0.132	1971	0.213	0.198	1990	0.618	0.599	2009	0.984	0.984
1953	0.143	0.133	1972	0.220	0.204	1991	0.641	0.625	2010	<b>1.000</b>	<b>1.000</b>
1954	0.144	0.134	1973	0.233	0.216	1992	0.657	0.643	2011		1.014
1955	0.144	0.133	1974	0.256	0.238	1993	0.673	0.663	2012		1.030
1956	0.146	0.136	1975	0.278	0.258	1994	0.687	0.680	2013		1.048
1957	0.151	0.140	1976	0.294	0.272	1995	0.704	0.699	2014		1.068
1958	0.155	0.144	1977	0.312	0.290	1996	0.723	0.720	2015		1.090
1959	0.156	0.145	1978	0.326	0.310	1997	0.738	0.736	2016		1.113
1960	0.159	0.148	1979	0.357	0.339	1998	0.749	0.748	2017		1.138
1961	0.161	0.149	1980	0.397	0.377	1999	0.764	0.764	2018		1.163
1962	0.162	0.150	1981	0.435	0.413	2000	0.790	0.790	2019		1.189
1963	0.164	0.153	1982	0.461	0.438	2001	0.812	0.812	2020		1.215
1964	0.166	0.155	1983	0.481	0.457	2002	0.825	0.825	2021		1.242
1965	0.169	0.157	1984	0.500	0.476	2003	0.844	0.844			

Revised June 27, 2011, using final 2010 CPI (CPI = 2.18056) and the average of OMB and CBO inflation estimates for 2011 and later years as of January and February 2011. For inflation assumptions for 2010 and later years, see the shaded box below.

CPI is CPI-U-X1, which applies the post-1982 CPI methods to the period 1950 to 1982. By definition, CPI-U-X1 equals CPI-U starting in 1983, so the conversion factors are the same.

CPI is CPI-U, the broader measure for all urban consumers, using year-to-year averages, not December to December.

Conversion factors for the experimental CPI [CPI-U-RS] are supplied for the years 1947 to 2009. These can be used in place of CPI-U-X1 for careful comparison over years starting in 1947. However, there are limits as well as strengths to this experimental measure (see link below for additional information).

Note: Historical CPI-U-RS is revised each year, so earlier-year data can change with yearly revision. CPI-U-RS reflects estimated CPI-U-RS data (see below), re-based here from 1977 as the base year to 2010 as the base year. Updated from *Economic Report of the President 2011*. Table B-62.

**Inflation assumptions: Inflation conversion factors for 2011 and later years assume 1.45% in 2011, 1.55% in 2012, 1.75% in 2013, 1.90% in 2014, 2.05% in 2015, 2.15% in 2016, 2.25% in 2017, and 2.20% in 2018-2021. These are averages of OMB and CBO inflation estimates as of January-February 2011.**

**CPI-U-RS and CPI-U-X1 updated from *Economic Report of the President 2011*, Table B-62, and sources listed below.**

Source of pre-1978 CPI-U-RS data: Census Bureau, revised to reflect final CPI-U-RS 2010 revision from BLS March 2011 (see below).

The Census Bureau uses the Bureau of Labor Statistics' experimental Consumer Price Index (CPI-U-RS) starting 1977. The Census Bureau derived the CPI-U-RS for years before 1977 by applying the 1977 CPI-U-RS-to-CPI-U ratio to the 1947 to 1976 CPI-U. This is available at [http://www.bls.gov/cpi/cpiurs1978\\_2009.pdf](http://www.bls.gov/cpi/cpiurs1978_2009.pdf). Two additional sources of information about the CPI-U-RS are available from the BLS at <http://www.bls.gov/cpi/cpiirsga.pdf> and at <http://www.bls.gov/opub/mlr/1999/06/art4full.pdf>. The current set of underlying CPI-U-RS data is from [http://www.bls.gov/cpi/cpiursai1978\\_2010.pdf](http://www.bls.gov/cpi/cpiursai1978_2010.pdf), accessed 06-27-2011.

CF denominated in years 1995 to estimated 2011 in Excel and pdf formats for years 1774 to estimated 2021 are available at the online address indicated below.

Prior to the 2008 revision, a different data base was used for the period starting 1665 and ending 1913. See the main inflation conversion factor page for details.

The address of the inflation conversion factor web page is <http://oregonstate.edu/cla/polisci/faculty-research/sahr/sahr.htm>.

See the important notes on the reverse side

**Consumer Price Index (CPI) Conversion Factors to Convert to 2010 Dollars (continued)**  
Using the CPI-U-RS, an experimental CPI measure

For details about CPI-U-RS, see the materials available at <http://stats.bls.gov/cpi/cpi-rsdc.htm>. Note also the points below.

**U.S. Census Bureau**

**Statement on CPI measures from Census Bureau Income 2004**

**The Bureau of Labor Statistics' Statement on the Use of the CPI-U-RS**

The Bureau of Labor Statistics (BLS) has made numerous improvements to the Consumer Price Index (CPI) over the past quarter-century. While these improvements make the present and future CPI more accurate, historical price index series are not adjusted to reflect the improvements. Many researchers, however, expressed an interest in having a historical series that was measured consistently over the entire period. Accordingly, the Consumer Price Index research series using current methods (CPI-U-RS) presents an estimate of the CPI for all Urban Consumers (CPI-U) from 1978 to present that incorporates most of the improvements made over that time span into the entire series.

The CPI-U-RS is in some ways an extension of the CPI-U-X1, an experimental series that shows what the inflation rate in the CPI-U might have been, if the current rental-equivalence method of measuring the cost of homeownership had been in place prior to 1983.

The CPI-U-RS has some limitations. First, most estimates are based on BLS research covering a short period of time and extrapolated to a longer period. Therefore, there is considerable uncertainty surrounding the magnitude of the adjustments. Second, there have been several improvements in the CPI not incorporated into the CPI-U-RS, either because they do not represent changes in methodology, because they had negligible impacts on the CPI's growth rate, or because it was impossible to systematically estimate the impacts of the new methods in past years.

Nonetheless, the CPI-U-RS can serve as a valuable proxy for researchers needing a historical estimate of inflation using current methods. The direct adjustment of individual CPI index series makes this the most detailed and systematic estimate available of a consistent CPI series.

April 5, 2004

From <http://www.bls.gov/cpi/cpiurstx.htm> [note: no longer posted online]

**Comparison of Trends in Income Using the CPI-U-RS and CPI-U-X1**

In order to accurately assess changes in economic well-being, an adjustment for inflation is required. Incomes from different years need to be compared in dollars with the same purchasing power. In order to adjust for inflation, the Census Bureau uses the Consumer Price Index for urban consumers (CPI-U) provided by the Bureau of Labor Statistics (BLS). This is an index of the cost of a market basket of goods and services representing the average consumption of the urban population.

In 1983, the BLS began using a revised method to calculate the CPI-U. This method uses estimates of the cost of renting equivalent housing to measure home ownership costs. As a result, it is less sensitive than the earlier measure to changes in housing prices and mortgage rates. The official CPI-U time series reflects the old methodology prior to 1983 and the new methodology from 1983 to the present.

In order to create a consistent series over time, the BLS also created an experimental series (the CPI-U-X1) based on the new methodology for the 1967 to 1982 period. Until recently, the Census Bureau used the CPI-U-X1 for the historical series of income from 1967 to the present, and for years prior to 1967, extrapolated the X1 based on its ratio to the CPI-U in 1967.

In 1999, the BLS released a new series, the Consumer Price Index Research Series Using Current Methods (CPI-U-RS).<sup>1</sup> The CPI-U-RS is an index of inflation from 1978 to the present that incorporates most of the improvements in methodology made to the CPI-U over that time span into the entire series. Among other improvements, the CPI-U-RS makes quality adjustments for the aging of housing units and for the prices of used cars, personal computers, and televisions, and it employs a geometric mean formula to account for consumer substitution within CPI item categories. Although the research series has some limitations, including being subject to annual revisions, the BLS states that it is the most detailed and systematic estimate available of a consistent CPI series.

Currently, the Census Bureau uses the CPI-U-RS as the inflation adjuster for historical income statistics from 1978 to the present. For years before 1978, the Census Bureau extrapolates the CPI-U-RS. For 1967 through 1977, the extrapolation uses the ratio of the CPI-U-RS to the CPI-U-X1 in 1978. For 1947 through 1966, the extrapolation uses the ratio of the CPI-U-RS to the CPI-U in 1967.

1. See Kenneth J. Stewart and Stephen B. Reed, "CPI Research Series Using Current Methods, 1978-98," *Monthly Labor Review*, June 1999.

Source: U.S. Census Bureau

Last Revised: May 13, 2004

From [http://www.census.gov/hhes/income/income01/cpiurstx.html#N\\_1](http://www.census.gov/hhes/income/income01/cpiurstx.html#N_1) [note: no longer posted online]

**Updated CPI-U-RS, All Items and All items less food and energy, 1978-2009**

**BLS Statement on the Use of the CPI-U-RS**

The Bureau of Labor Statistics (BLS) has made numerous improvements to the Consumer Price Index (CPI) over the past thirty-plus years. While these improvements make the present and future CPI more accurate, historical price index series are not adjusted to reflect the improvements. Many researchers, however, expressed an interest in having a historical series that was measured consistently over the entire period. Accordingly, the Consumer Price Index research series using current methods (CPI-U-RS) presents an estimate of the CPI for all Urban Consumers (CPI-U) from 1978 to present that incorporates most of the improvements made over that time span into the entire series.

The CPI-U-RS is in some ways an extension of the CPI-U-X1, an experimental series that shows what the inflation rate in the CPI-U might have been, if the current rental equivalence method of measuring the cost of homeownership had been in place prior to 1983.

The CPI-U-RS has some limitations. First, most estimates are based on BLS research covering a short period of time and extrapolated to a longer period. Therefore, there is considerable uncertainty surrounding the magnitude of the adjustments. Second, there have been several improvements in the CPI not incorporated into the CPI-U-RS, either because they do not represent changes in methodology, because they had negligible impacts on the CPI's growth rate, or because it was impossible to systematically estimate the impacts of the new methods in past years.

Nonetheless, the CPI-U-RS can serve as a valuable proxy for researchers needing a historical estimate of inflation using current methods. The direct adjustment of individual CPI index series makes this the most detailed and systematic estimate available of a consistent CPI series.

from [http://www.bls.gov/cpi/cpiurs1978\\_2009.pdf](http://www.bls.gov/cpi/cpiurs1978_2009.pdf)