

**Consumer Price Index (CPI) Conversion Factors to Convert to 2007 Dollars**  
**Using the CPI-U-RS series, 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 2007 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 1947 = \$7937 dollars of 2007 (\$1000 / 0.126); suggest rounding to \$7940.**  
**For example, for CPI-U-X1 \$1000 dollars of 1952 = \$7194 dollars of 2007 (\$1000 / 0.139); suggest rounding to \$7190.**

**Note: To reverse the process**, that is, to determine what a 2007-dollar figure would be in the dollars of another year, simply multiply the 2007 figure by the conversion factor of that year. For example, \$1000 2007 dollars would be about \$126 in 1947 (\$1000 x 0.126), using CPI-U-RS.

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

Year	CF RS	CF X1	Year	CF RS	CF X1	Year	CF RS	CF X1	Year	CF RS	CF X1
1947	0.126		1965	0.178	0.165	1983	0.505	0.480	2001	0.854	0.854
1948	0.136		1966	0.183	0.170	1984	0.526	0.501	2002	0.868	0.868
1949	0.134		1967	0.189	0.175	1985	0.544	0.519	2003	0.887	0.888
1950	0.136	0.126	1968	0.196	0.182	1986	0.554	0.529	2004	0.911	0.911
1951	0.147	0.137	1969	0.205	0.190	1987	0.573	0.548	2005	0.942	0.942
1952	0.149	0.139	1970	0.214	0.199	1988	0.594	0.571	2006	0.972	0.973
1953	0.151	0.140	1971	0.224	0.208	1989	0.619	0.598	2007	<b>1.000</b>	<b>1.000</b>
1954	0.152	0.141	1972	0.231	0.214	1990	0.650	0.630	2008		1.028
1955	0.151	0.140	1973	0.245	0.228	1991	0.674	0.657	2009		1.051
1956	0.153	0.143	1974	0.270	0.250	1992	0.691	0.677	2010		1.074
1957	0.159	0.147	1975	0.292	0.271	1993	0.708	0.697	2011		1.098
1958	0.163	0.151	1976	0.309	0.287	1994	0.723	0.715	2012		1.123
1959	0.164	0.152	1977	0.328	0.305	1995	0.740	0.735	2013		1.148
1960	0.167	0.155	1978	0.343	0.326	1996	0.760	0.757	2014		1.173
1961	0.169	0.157	1979	0.376	0.357	1997	0.776	0.774	2015		1.199
1962	0.170	0.158	1980	0.417	0.397	1998	0.787	0.786	2016		1.226
1963	0.173	0.161	1981	0.457	0.435	1999	0.804	0.804	2017		1.253
1964	0.175	0.163	1982	0.485	0.461	2000	0.831	0.831	2018		1.280

Revised April 2, 2008, using final 2007 CPI (CPI = 2.07342) and the average of early-2008 OMB and CBO inflation estimates for 2008 and later years. For inflation assumptions for 2008 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 2007. It 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, from BLS, *Updated CPI-U-RS*. . . , March 2008, available at [http://stats.bls.gov/cpi/cpiurs1978\\_2007.pdf](http://stats.bls.gov/cpi/cpiurs1978_2007.pdf), re-based here from 1977 to 2007.

**Inflation assumptions: Inflation conversion factors for 2008 and later years assume 2.8% in 2008, 2.2% in 2009, 2.25% each year 2010 to 2013, and 2.2% each year 2014 to 2018. Estimates 2008-2013 are the average of OMB and CBO inflation estimates for each year as of early 2008; 2014-2018 are only from CBO because OMB did not project past 2013 in its 2009 Budget proposals.**

Source of pre-1978 CPI-U-RS data: Census Bureau, revised to reflect final CPI-U-RS 2002 revision from BLS April 2003 (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.census.gov/hhes/www/income/income04/cpiurs.html>

CF denominated in years 1995 to estimated 2008 in Excel format starting 1774 are available at <http://oregonstate.edu/cla/polisci/faculty-research/sahr/infcf17742007.xls>

CF denominated in years 1995 to estimated 2008 in pdf format starting 1774 are available at <http://oregonstate.edu/cla/polisci/faculty-research/sahr/infcf17742007.pdf>

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.

**Consumer Price Index (CPI) Conversion Factors to Convert to 2007 Dollars (continued)**  
Using the CPI-U-RS, an experimental CPI measure, and CPI-U-X1, which applies the post-1982 CPI to the period 1950-1982.

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

#### **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]

## **U.S. Census Bureau**

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

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