

**Notes on the Philadelphia Fed's
Real-Time Data Set for Macroeconomists (RTDSM)**

Indexes of Aggregate Weekly Hours

Last Updated: December 22, 2016

I. General Comments

This file provides documentation for the Philadelphia Fed's real-time data set of the Bureau of Labor Statistics's (BLS) indexes of aggregate weekly hours. The dataset contains three indexes: total private hours, hours in the goods-producing sector, and hours in the service-producing sector. There are several worksheets for each variable, each containing the real-time monthly observations that would have been available to someone at the point of time (the *vintage* date) given in the column headers. These headers follow the nomenclature given by $HyyMm$, $HGyyMm$ and $HSyyMm$, where H denotes total hours, HG denotes hours in the goods-producing sector and HS denotes hours in the service-producing sector, yy is a two-digit number representing the vintage year, M denotes the word "month," and m represents the vintage month. For example, the observations that were available in June 1989 for total hours are those given in the column, H89M6. The last observation in this column is that for May 1989, since that was the last observation reported in the Bureau of Labor Statistics's (BLS) statistical report of June 1989. The time series observations within a vintage are labeled as $yyyy:mm$, where $yyyy$ is a four-digit number representing the year of the observation, and mm is a two-digit number representing the month of the observation. For example, the observation for May 1989 is labeled 1989:05. All data are monthly, seasonally adjusted indexes. The base year for the indexes varies over vintages (but not over time within a vintage). Please note that these data come from BLS's establishment survey, not the household survey.

Because these data are indexes, with a base year that can vary from one vintage (column) to the next, it is, in general, inappropriate to compare the level of the index for a particular observation in one vintage with the value for the same observation in another vintage. However, within a vintage, it is appropriate to compare observations over time, by for example, computing growth rates.

The vintages are monthly. All files are in Excel format. The file for the total index is **hMvMd.xlsx** (vintages September 1971 to present). The comparable files for hours in the goods-sector and hours in the service sector are: **hgMvMd.xlsx** and **hsMvMd.xlsx**.

II. Methodology

Our methodology for collecting real-time observations for indexes of aggregate weekly hours is identical to that described for the other variables in RTDSM.¹ We begin, with the vintage of September 1971, by locating a hard copy *deep-history report* that contains the time series observations that would have been available to someone in September 1971. Subsequent vintages are then added from *high-frequency reports*, which contain a limited span of observations (usually the last 12 months). As we move from one vintage to the next, two things happen. First, we obtain an additional month of data. This is the initial release of the hours index for that month. Second, we incorporate any revisions to observations common to both vintages. Our high-frequency source is *Employment and Earnings*, produced by BLS.² We continue in this fashion until BLS releases a benchmark revision to the data. Because such revisions generally affect more observations than those reported in *Employment and Earnings* (usually the last 5 years, though sometimes the entire series), we must find another deep-history report.

We obtain deep-history reports from a variety of sources. Table 1 below lists the vintage dates reflecting benchmark revisions, the range of observations affected, and the source of our deep-history report.

¹ There is one exception: For some variables in RTDSM (variables from the national income and product accounts, M1 and M1, reserves measures, the unemployment rate, and the CPI), we have collected quarterly vintages of the data as they were available in the middle of each quarter. In contrast, the vintages on hours are collected each month, and the day corresponding to the monthly vintage date depends on the day the data are released by BLS. The same is true for some other monthly variables in RTDSM (nonfarm payroll employment, industrial production, capacity utilization, and housing starts).

² Table 2 below lists the table in *Employment and Earnings* that reports the data we used in our vintages.

The Philadelphia Fed began to collect data on hours in real time beginning with the vintage of November 1992. At that time, we were collecting the data for reasons unrelated to our real-time data set, and, in some cases, we did not collect the full time series history that was available from BLS. BLS provides historical observations beginning with that for 1964:01 for the total index (H) and the index for the service-producing sector (HS). For the goods-producing sector (HG), BLS provides time series observations beginning with that for 1947:01. In our vintages prior to that of November 1992, we have collected as many time series observations as we could based on the number of observations reported in our hard-copy deep history sources. For the vintages that we collected in real time, we have assembled time series observations for H and HS beginning with the observation for 1964:01, the official BLS starting date for H and HS. In contrast, for HG, our time series observations begin with that for 1964:01 (vintages November 1992 to October 1997) and 1959:01 (vintages after October 1997). Thus, in vintages since November 1992, we have fewer time series observations for HG than those reported by BLS.

Table 1. Benchmark Revisions

Vintage of Benchmark Revision	Starting Point of Revised Observations	Deep-History Source³
September 1971	HG 1947 H and HS 1964	<i>Employment and Earnings, United States, 1909-1971 (BLS Bulletin 1312-8).</i>
October 1972	1967	<i>Employment and Earnings, United States, 1909-72 (BLS Bulletin 1312-9).</i>
June 1973	1968	<i>Employment and Earnings, June 1973.</i>
December 1974	N.A.	See the section on special notes below.
October 1975	HG 1947 H and HS 1964	<i>Employment and Earnings, United States, 1909-75 (BLS Bulletin 1312-10).</i>
December 1976	1971	<i>Employment and Earnings, December 1976.</i>
February 1977	July 1975	<i>Employment and Earnings, February 1977.</i>
December 1977	1972	<i>Employment and Earnings, December 1977.</i>
October 1978	HG 1947 H and HS 1964	<i>Employment and Earnings, October 1978.</i>
October 1979	1974	<i>Employment and Earnings Supplement: Revised Establishment Data, November 1979.</i>
July 1980	1975	<i>Supplement to Employment and Earnings Supplement: Revised Establishment Data, September 1980.</i>
July 1981	HG 1947 H and HS 1964	<i>Supplement to Employment and Earnings: Revised Establishment Data, August 1981.</i>
June 1982	1977	<i>Supplement to Employment and Earnings: Revised Establishment Data, June 1982.</i>
June 1983	1982	<i>Supplement to Employment and Earnings Supplement, July 1983.</i>
June 1984	1979	<i>Supplement to Employment and Earnings, July 1984.</i>
June 1985	1980	<i>Supplement to Employment and Earnings, June 1985.</i>
June 1986	1981	<i>Supplement to Employment and Earnings, June 1986.</i>

³ All hard-copy deep-history sources were published by the U.S. Department of Labor, Bureau of Labor Statistics.

Table 1 (continued). Benchmark Revisions

Vintage of Benchmark Revision	Starting Point of Revised Observations	Deep-History Source
June 1987	1982	<i>Supplement to Employment and Earnings</i> , July 1987.
June 1988	1983	<i>Supplement to Employment and Earnings</i> , August 1988.
June 1989	1984	<i>Supplement to Employment and Earnings</i> , August 1989.
September 1990	HG 1947 H and HS 1964	<i>Employment, Hours, and Earnings, United States, 1909-90, Volume II</i> , (BLS Bulletin 2370), March 1991.
June 1991	1986	<i>Supplement to Employment and Earnings</i> , July 1991.
June 1992	1987	<i>Supplement to Employment and Earnings</i> , August 1992.

The Philadelphia Fed began to collect these data in real time beginning with the vintage of November 1992. Thus, we do not list the hard-copy source of deep-history reports after the last benchmark revision listed in the table above (June 1992).

Over the years, BLS has changed the table number and table title of these data reported in *Employment and Earnings*. Table 2 below lists the table number and the date of the edition of *Employment & Earnings* that we used in our vintages.

Table 2. Table Numbers for Aggregate Weekly Hours Data in *Employment and Earnings*

Date of <i>Employment and Earnings</i>	Table Number in <i>Employment and Earnings</i> for Indexes of Aggregate Weekly Hours
September 1971	C-8
January 1976	C-9
October 1978	C-8
August 1981	C-7
June 1984	C-6
February 1994	B-9

There have been some slight changes over time in the way that BLS characterizes these data. In the table below, we list BLS's table title and the first edition of *Employment and Earnings* to use that title.

Table 3. BLS Table Titles for Aggregate Weekly Hours Data in Employment and Earnings

Date of Employment and Earnings	Table Title
September 1971	“Indexes of Aggregate Weekly Man-Hours of Production or Nonsupervisory Workers on Private Nonagricultural Payrolls, Seasonally Adjusted”
October 1974	“Indexes of Aggregate Weekly Man-Hours of Production or Nonsupervisory Workers on Private Nonagricultural Payrolls, by Industry Division and Major Manufacturing Group, Seasonally Adjusted”
October 1975	“Indexes of Aggregate Weekly Hours of Production or Nonsupervisory Workers on Private Nonagricultural Payrolls, by Industry Division and Major Manufacturing Group, Seasonally Adjusted”
June 1984	“Indexes of Aggregate Weekly Hours of Production or Nonsupervisory Workers on Private Nonagricultural Payrolls, by Major Industry and manufacturing Group, Seasonally Adjusted”
September 1990	“Indexes of Aggregate Weekly Hours of Production or Nonsupervisory Workers on Private Nonfarm Payrolls, by Major Industry and Manufacturing Group, Seasonally Adjusted”
June 2003	“Indexes of Aggregate Weekly Hours of Production or Nonsupervisory Workers on Private Nonfarm Payrolls, by Major Industry Sector and Selected Industry Detail, Seasonally Adjusted”

There are some methodological points to consider in understanding precisely how we incorporate a benchmark revision into a new vintage. First, *Employment and Earnings* always provides a detailed discussion of the revision process, including the reasons for the revision and the range of observations affected. When possible, we do not rely on BLS’s discussion about the range of observations affected by

the revision in deciding on the range of observations to carry over from the preceding vintage. In some cases, our deep-history sources (listed in Table 1) contain observations dated prior to the date that BLS says is the first date affected by a benchmark revision. In these cases, we use the full array of observations from the new deep-history report, not just the range that BLS asserts is the one affected by the benchmark revision.

Second, in some cases our deep-history report was published on a date after the vintage date, suggesting the possibility that some of the observations in that report may not have been available on the vintage date. (Such a possibility could occur if BLS released revised observations over time, rather than all at once—which sometimes occurs for other variables, for example, when the BEA releases a benchmark revision to the national income and product accounts.) For the data on hours, we treat this as a publication lag, not a lag in the availability of the revised observations. Thus, in the interest of maintaining as deep a history as possible in each vintage, we decided on the following policy: Unless we detected evidence in BLS’s discussion of the revision that the revised values would be released in a staggered form, we assumed all revised values were released at the same time. We detected no evidence to the contrary in any benchmark revision.

Third, there is one problem with the preceding policy: When the deep-history report is published a number of months after the date of the benchmark revision, the tail-end observations in the report can reflect normal month-to-month revisions that would not have been known on the date of the benchmark revision. We do not incorporate these observations in the vintage of the benchmark revision. Rather, we take the last 12 observations from those listed in the edition of *Employment and Earnings* in which the benchmark revision occurred. For example, in constructing the benchmark vintage of September 1990 (see Table 1), we used the deep-history source *Employment, Hours, and Earnings, United States, 1909 – 90*, which was published after the vintage date, in March 1991, and contained observations through 1990:11. Our tail-end observations in the September 1990 vintage, however, were those that appeared in the September 1990 edition of *Employment and Earnings*.

III. Exact Release Dates

We thank Francis Horvath and other staff at the Bureau of Labor Statistics, U.S. Department of Labor, for giving us a file of release dates for the data from the U.S. labor market. The file is available on the Philadelphia Fed’s web pages for downloading our real-time data. An analysis by Horvath and other BLS staff suggests that February 8, 1966, is the date of the first release to combine the data from the CPS

(Household Survey) and the CES (Establishment Survey). The CPS includes the unemployment rate. The CES includes such variables as nonfarm payroll employment and indexes of hours worked. Prior to February 8, 1966, BLS released the data from the CPS in the first week of the month. The data from the CES were released about one week later. Beginning on November 7, 1969, BLS released the combined data from the CPS and CES on the first Friday of the month, a practice that continues today. (When the first Friday occurs early in the month, the data are sometimes released on the second Friday.)

For additional historical perspective on the CPS and the timing of its data releases, see the article by John E. Bregger, entitled “The Current Population Survey: A Historical Perspective and BLS’ Role,” available on BLS’s web page, at the URL: www.bls.gov/opub/mlr/1984/06/art2full.pdf.

IV. Relationship Between Monthly Vintages and RTDSM Quarterly Vintages

In early June 1999, the Philadelphia Fed released its real-time data set, consisting of quarterly vintages of quarterly observations on variables from the national income and product accounts (NIPA) and non-NIPA variables. These quarterly vintages contain the data available in the middle month of the quarter.

If we assume BLS’s report on hours was always released on or before the middle of the month, the following table shows how to merge the quarterly vintages of the RTDSM data set with the monthly vintages of the data set on indexes of aggregate weekly hours—that is, how to merge the two to form a consistent quarterly information set. (A similar table appears in our documentation for nonfarm payroll employment because this variable and the aggregate weekly hours indexes are released by BLS at the same time. Both series come from BLS’s establishment survey.)

Table 4. Merging Quarterly Vintages from the Real-Time Data Set With the Monthly Vintages of Indexes of Aggregate Weekly Hours

Quarterly Vintages	Monthly Vintages of Hours Indexes (column header name for each variable)
yyyy:Q1	HyyM2, HGyyM2, and HSyyM2
yyyy:Q2	HyyM5, HGyyM5, and HSyyM5
yyyy:Q3	HyyM8, HGyyM8, and HSyyM8
yyyy:Q4	HyyM11, HGyyM11, and HSyyM11

V. Our Methodology for Incorporating Corrections to BLS Errors

Occasionally, *Employment and Earnings* contains errors in the reported data. In general, we do not know whether such errors are due to computational or typographical mistakes. When BLS discovers such errors, these are reported, along with the corrections, in a later edition. Our policy on incorporating this new information is as follows: When we discover an *Employment and Earnings* that contains corrections to previously published data, we incorporate such corrections into that vintage. Subsequent vintages reflect the correction as well. On the premise that the corrections would not have been known at the time of previous vintages, *we do not adjust the observations in previous vintages.*

VI. Quality of the Data

In our judgment, these data on hours are of high quality. We believe each vintage accurately represents the exact data that would have been available to someone at the vintage date. We have taken steps to minimize our own data-entry errors. In particular, all vintages have been checked at least twice for errors. Benchmark vintages have been checked three times. Some subtle errors possibly remain, and users should examine the data carefully for outliers that we may have overlooked.

Questions about the data should be addressed to:

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The remainder of this documentation discusses any special features of the real-time data on hours.

HyyMm, HGyyMm, HSyyMm—Indexes of Aggregate Weekly Hours

(Total, Goods-producing Sector and Service-producing Sector)

1. Seasonally adjusted index level, monthly, base year varies across vintages.
2. First Vintage: 1971:M9.
3. First Observation: Varies by vintage and series. H and HS generally begin in 1964:01. HG can begin before 1964:01.
4. High-Frequency Source: Bureau of Labor Statistics's (BLS) *Employment and Earnings*
5. Deep-History Source: Varies by benchmark revision (see Table 1)
6. Vintage Names: HyyMmm, HGyyMmm, HSyyMmm, where yy is the year of the vintage (two digits), M represents the word month, and mm is the month of the vintage, (mm=1,2, 3, ... 12).

H	= index for total
HG	= index for goods-producing sector
HS	= index for service-producing sector
7. Vintage Dates: Each vintage corresponds with the day the data are released that month.

Special Notes

1. **H71M10 and HS71M10 — Unusual Revision.** An unusual revision is recorded in these vintages. H was revised in 1971:M5, and HS was revised over the observations 1971:M5 to 1971:M8.
2. **HG72M6 — BLS Correction.** This vintage incorporates corrections to data previously published by BLS for HG for the observations 1971:M7 and 1971:M9.
3. **HS74M2 — Incorrect Value.** The value published in *Employment and Earnings* for HS for the observation 1974:M1 (100.8) seems wrong. We have no way to check the observation. Users may wish to replace this value (100.8) with the value reported in the following vintage for the same observation (116.6).
4. **H74M12 to H75M9, HG74M12 to HG75M9, HS74M12 to HS75M9 — No Deep History.** No deep history is available in these vintages. There was a benchmark revision in December 1974, but BLS experienced some unexpected problems in publishing its deep-history report. We believe the revised deep-history was indeed available to analysts at the time. There is no official

hard-copy deep-history report available to use in recording the observations. Consequently, the first observation in these vintages is that for 1973:M11.

5. **HG75M11 — Unusual Revision.** The observation for HG in 1974:M10 was revised in this vintage.
6. **H76M2 and HS76M2 — Unusual Revision.** The observations for H and HS over the period 1975:M7 to 1975:M10 were revised in this vintage.
7. **H77M2, HG77M2, and HS77M2 — Special Interim Revision.** An “interim” revision occurred due to errors in the data previously published by BLS. Observations for H, HG, and HS were revised over the period 1975:M7 to 1977:M1.
8. **H77M12 — BLS Publication Error.** A benchmark revision occurred in this vintage. However, the observation for H in 1976:M11 was reported as 112.8 in our deep-history report (see Table 1), but as 112.3 in our high-frequency report (*Employment and Earnings*, December 1977.) Our data set records the value as 112.8.
9. **H79M7, HG79M7, and HS79M7 — BLS Publication Error.** A serious error occurred in BLS’s publication of *Employment and Earnings* for July 1979: This edition mislabeled the column headers (by one month) in the table reporting the data on hours. BLS published an errata in the following edition of *Employment and Earnings* (August 1979). We have chosen to report the correct values in this vintage (vintage 79M7), even though the official BLS errata appeared one month later.
10. **H81M1 and HG81M1 — Unusual Revision.** The observations for H and HG in 1980:M9 were revised in this vintage.
11. **HG83M6 and HS83M6 — BLS Publication Error.** A benchmark revision occurred in this vintage. There is a discrepancy between the observations for HG and HS in 1983:M1 reported in our high-frequency source (*Employment and Earnings*, June 1983) and those reported in our deep-history report (see Table 1). After some investigation, we decided to use the values reported in our high-frequency source (90.0 for HG and 111.9 for HS), rather than the values reported in the deep-history report (89.8 and 112.0), which is dated one month later than the high-frequency source. The latter values (89.8 and 112.0) are the values that we report in the next vintage (83M7). These are the values BLS reported in the July 1983 *Employment and Earnings*.
12. **HG83M7 and HS83M7 — Unusual Revision.** The observations for HG and HS in 1983:M1 were revised in this vintage. See the note listed above for HG83M6 and HS83M6 for additional details.
13. **HS86M12 — Unusual Revision.** The observation for HS in 1986:M8 was revised in this vintage.
14. **HS87M1 — Unusual Revision.** The observation for HS in 1986:M9 was revised in this vintage.

15. **H96M1, HG96M1, and HS96M1 — Federal Government Shutdown.** The data in this vintage were collected on January 19, 1996, about two weeks later than the first Friday of month, which marks the information set for the other vintages. We delayed our real-time collection of this vintage two weeks in order to retrieve the observation for 1995:M12, which, due to the shutdown of the federal government, would not have been available had we collected the vintage on the first Friday of the month.
16. **H02M12, HG02M12, and HS02M12 — Unusual Revision and BLS Error.** On December 6, 2002, BLS released an unusual revision affecting the observations on H and HS beginning in 2000. Our vintage reflects these revised data as they existed on December 6. A few days later, BLS released corrected values for the last few monthly observations on H, HG, and HS. Our December vintage does not reflect the corrected values. We list here the corrected values, as reported in the December 2002 *Employment & Earnings*. For H, the corrected values are for observations 2002:M9 (148.3), 2002:M10 (148.1), and 2002:M11 (148.1). For HG, the corrected value is for observation 2002:M9 (104.4). For HS, the corrected values are for observations 2002:M10 (168.1) and 2002:M11 (168.2).

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