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

Capacity Utilization

Last Updated: December 21, 2016

I. General Comments

This file provides documentation for the Philadelphia Fed's real-time data set of the Federal Reserve Board's capacity utilization series. Two series are available: total industry and manufacturing. The data set consists of 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 of the worksheets. These headers follow the nomenclature given by CUT*yy*M*m* and CUM*yy*M*m*, where CUT and CUM denote total and manufacturing capacity utilization, *yy* is a two-digit number representing the vintage year, M denotes the word "month," and *m* is a one- or two-digit number representing the vintage month. For example, the observations available in June 1989 are those given in the columns, CUT89M6 and CUM89M6. (There are separate files for the total and manufacturing series.) The last observation in these columns is that for May 1989, because that was the last observation reported in the Federal Reserve Board's capacity utilization report of June 1989. (Prior to April 1990, the official Fed report is the G.3 release, and starting in April 1990, the official report is the Fed's G.17 release, which contains capacity utilization as well as industrial production.) 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, and expressed in percentage points.

The vintages are monthly. All the files are Excel workbooks. The file for the total capacity utilization series is **cutMvMd.xlsx** (vintages July 1983 to present). The comparable file for the manufacturing measure is **cumMvMd.xlsx** (vintages August 1979 to present).

II. Methodology

Our methodology for collecting real-time observations on capacity utilization is identical to that described for the other variables in RTDSM.[1] We begin, with the vintage of August 1979, by locating a hard copy *deep-history report* containing all the time series observations that would have been available to someone in August 1979. Subsequent vintages are then added from *high-frequency reports* (e.g., the aforementioned G.3 and G.17 releases), which contain a much more limited span of observations (usually the last 12 months). As we move from one monthly vintage to the next, two things happen. First, we obtain an additional month of data. This is the initial release of capacity utilization for that month. Second, we incorporate any revisions to observations common to both vintages. We proceed in this fashion until the Board releases a benchmark revision. Because such revisions generally affect more observations than are reported in the G.3 / G.17, we must find another deep-history report.

We obtain deep-history reports from a variety of sources (described in a table below). Not all deep-history reports list the observations beginning with the same date. Thus, because we are careful to include only those observations that we are sure were available in real time, some vintages have different starting dates for the observations.

The Federal Reserve Board's G.3 release did not always report capacity utilization for total industry. The first release to do so was the G.3 release of July 18, 1983. Thus, for the total industry measure, we are unable to provide vintages prior to the vintage of July 1983. Currently, the first vintage for manufacturing capacity utilization is that of August 1979, and the first for total industry is that of July 1983.

The first official Federal Reserve Board release of its capacity utilization series appears to be that of January 20, 1967. However, that release (known as the E.5) reported only quarterly-

---

[1] There is one exception: For some of the variables in RTDSM (variables from the national income and product accounts, M1 and M2, reserves measures, the unemployment rate, and the CPI), we have collected quarterly vintages of the data as they were available on the 15th day of the middle month of each quarter. In contrast, the capacity utilization vintages are collected each month, and the day corresponding to the monthly vintages depends on the day the data are released. In other words, we drop the significance of the 15th day in collecting data on

average observations for the manufacturing sector. The E.5 report was released quarterly, usually during the third week of the first month of each quarter and contained data through the previous quarter. On January 18, 1977, the Board discontinued the quarterly E.5 release, replacing it with the monthly G.3 release and began to release monthly observations on the manufacturing sector. Thus, for the manufacturing sector some additional monthly vintages of monthly observations are possible (back to the vintage of January 1977), and quarterly vintages of quarterly-average observations are available starting with the vintage of January 1967.

The following tables show the first observation available in each vintage for the total industry and manufacturing measures of capacity utilization.

---

capacity utilization. This is an important, though subtle, point because capacity utilization release dates tend to occur around the 15th, sometimes before and sometimes after. The section below discusses exact release dates.

Table 1. First Observation, By Vintage, Capacity Utilization for Total Industry

Vintages	First Observation Date
July 1983 to January 1997	1967:01
February 1997 to October 1998	1969:01
November 1998 to present	1967:01

Table 2. First Observation, By Vintage, Capacity Utilization for Manufacturing

Vintages	First Observation Date
August 1979 to June 1985	1967:01
July 1985 to January 1997	1948:01
February 1997 to October 1998	1969:01
November 1998 to present	1948:01

As mentioned previously, we obtain deep-history reports from a variety of sources. The following table lists the vintage dates reflecting benchmark or major revisions (revisions that affect more than the most recent four monthly observations) and the source of our deep-history report.

Table 3. Benchmark and Other Non-Standard Revisions in Capacity Utilization[2]

Vintage of Revision	Deep-History Source
August 1979	*Capacity Utilization: Manufacturing and Materials, January 1967 – December 1978*, Board of Governors of the Federal Reserve System, August 1979.
July 1983	*Capacity Utilization: Manufacturing, Mining, Utilities and Industrial Materials, January 1967 – December 1982*, Board of Governors of the Federal Reserve System, July 1983.
July 1985	*Capacity Utilization: Manufacturing, Mining, and Utilities and Industrial Materials, January 1967 – December 1984 with supplementary manufacturing data, January 1948 – December 1966*, Board of Governors of the Federal Reserve System, July 1985.
September 1986	*Capacity Utilization: Manufacturing, Mining, and Utilities and Industrial Materials, January 1967 – December 1985 with supplementary manufacturing data, January 1948 – December 1966*, Board of Governors of the Federal Reserve System, September 1986.
October 1987	*Capacity Utilization: Manufacturing, Mining, and Utilities and Industrial Materials, January 1967 - December 1986 with supplementary manufacturing data, January 1948 – December 1966*, Board of Governors of the Federal Reserve System, October 1987.
April 1990	Federal Reserve Statistical Release G.17, April 17, 1990.
May 1993	Federal Reserve Statistical Release G.17, May 14, 1993.
February 1994	Supplement to Federal Reserve Statistical Release G.17, February 4, 1994 and Federal Reserve Statistical Release G.17, February 15, 1994.
December 1994	Supplement to Federal Reserve Statistical Release G.17, November 30, 1994 and Federal Reserve Statistical Release G.17, December 15, 1994.
December 1995	Supplement to Federal Reserve Statistical Release G.17, November 30, 1995.

---

[2] In addition to the benchmark revisions listed in this table, there are some other nonstandard revisions affecting more than the last few monthly observations. These occurred in the vintages of: September 1980, September 1981, February 1991, and May 1996. In these cases, the revised observations were available in our high-frequency source.

Table 3 (continued). Benchmark Revisions

Vintage of Revision	Deep-History Source
February 1997	*Business Statistics of the United States, 1997 Edition*, Bernan Press.
December 1997	*Business Statistics of the United States, 1998 Edition*, Bernan Press.
December 1998	Collected in real time by the Philadelphia Fed.
December 1999	Collected in real time by the Philadelphia Fed.
December 2000	Collected in real time by the Philadelphia Fed.

There are a few methodological points to consider in understanding precisely how we incorporate a benchmark revision into a new vintage. First, our hard-copy sources generally provide a discussion of the revision process, including the reasons for the revision and the range of observations affected by the revision. When possible, we do not rely on this discussion about the range of observations affected by the revision when deciding on the range of observations to carry over from the preceding vintage. In many cases, our deep-history reports (Table 3) contain observations dated prior to the date that the report says is the first date affected by a benchmark revision. In these cases, we use the full array of observations listed in the new deep-history report, not just the range that a hard-copy source asserts is the range affected by the benchmark revision. When the deep-history report does not contain as many observations as we would like, we carry such observations over from the preceding vintage. However, we do this very cautiously—and only when we are very sure it is appropriate to do so.

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 the Board 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 NIPA.) For the capacity utilization data, we use our judgment in determining whether or not the new observations would have been available on the vintage date. Often, this judgment is based on a reading of the text in a Federal Reserve Board publication or, for example, on the range of time series observations plotted in a chart comparing the unrevised and revised observations.

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 listed 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 tail-end observations from those listed in the edition of the G.3 / G.17 release in which the benchmark revision occurred.

III. Exact Release Dates

In the interest of using a nomenclature for naming vintages (CUTyyMm, CUMyyMm) that is both systematic and also indicates the vintage date, we have chosen not to include the exact day of each monthly release in the names. For some analysis, it may be important to know the exact day—not just the month and year—on which the new observations were released. In general, the Federal Reserve Board releases its reports on capacity utilization around the middle of the month: Over the period since 1979, the release dates have varied from the 13th to the 19th. Over the period April 1990 to present, the Board's capacity utilization and industrial production series have been combined into one release (the G.17), and release dates for industrial production—and, hence, capacity utilization—can be found on the web pages of the Board of Governors. Release dates for capacity utilization over the period prior to April 1990 are listed below.

Table 4. Release Dates for Capacity Utilization Over the Period
Prior to April 1990

(Release dates over the post-April 1990 period can be found on the Federal Reserve Board's
web pages.)

Vintage	Release Date
August 1979	August 17, 1979
September 1979	September 17, 1979
October 1979	October 17, 1979
November 1979	November 16, 1979
December 1979	December 17, 1979
January 1980	January 17, 1980
February 1980	February 15, 1980
March 1980	March 17, 1980
April 1980	April 16, 1980
May 1980	May 19, 1980
June 1980	June 16, 1980
July 1980	July 17, 1980
August 1980	August 18, 1980
September 1980	September 17, 1980
October 1980	October 16, 1980
November 1980	November 17, 1980
December 1980	December 17, 1980

Table 4 (continued). Release Dates for Capacity Utilization Over the Period Prior to April 1990

Vintage	Release Date
January 1981	January 16, 1981
February 1981	February 18, 1981
March 1981	March 18, 1981
April 1981	April 16, 1981
May 1981	May 18, 1981
June 1981	June 17, 1981
July 1981	July 16, 1981
August 1981	August 17, 1981
September 1981	September 17, 1981
October 1981	October 19, 1981
November 1981	November 16, 1981
December 1981	December 17, 1981
January 1982	January 18, 1982
February 1982	February 18, 1982
March 1982	March 17, 1982
April 1982	April 16, 1982
May 1982	May 17, 1982
June 1982	June 16, 1982
July 1982	July 16, 1982
August 1982	August 13, 1982
September 1982	September 16, 1982
October 1982	October 18, 1982
November 1982	November 17, 1982
December 1982	December 16, 1982

Table 4 (continued). Release Dates for Capacity Utilization Over the Period Prior to April 1990

Vintage	Release Date
January 1983	January 17, 1983
February 1983	February 17, 1983
March 1983	March 16, 1983
April 1983	April 18, 1983
May 1983	May 16, 1983
June 1983	June 16, 1983
July 1983	July 18, 1983
August 1983	August 17, 1983
September 1983	September 16, 1983
October 1983	October 17, 1983
November 1983	November 16, 1983
December 1983	December 16, 1983
January 1984	January 16, 1984
February 1984	February 16, 1984
March 1984	March 16, 1984
April 1984	April 16, 1984
May 1984	May 16, 1984
June 1984	June 18, 1984
July 1984	July 16, 1984
August 1984	August 16, 1984
September 1984	September 17, 1984
October 1984	October 17, 1984
November 1984	November 16, 1984
December 1984	December 17, 1984

Table 4 (continued). Release Dates for Capacity Utilization Over the Period Prior to April 1990

Vintage	Release Date
January 1985	January 16, 1985
February 1985	February 19, 1985
March 1985	March 18, 1985
April 1985	April 17, 1985
May 1985	May 16, 1985
June 1985	June 17, 1985
July 1985	July 19, 1985
August 1985	August 16, 1985
September 1985	September 16, 1985
October 1985	October 17, 1985
November 1985	November 18, 1985
December 1985	December 16, 1985
January 1986	January 17, 1986
February 1986	February 18, 1986
March 1986	March 17, 1986
April 1986	April 16, 1986
May 1986	May 16, 1986
June 1986	June 16, 1986
July 1986	July 16, 1986
August 1986	August 18, 1986
September 1986	September 17, 1986
October 1986	October 17, 1986
November 1986	November 17, 1986
December 1986	December 16, 1986

Table 4 (continued). Release Dates for Capacity Utilization Over the Period Prior to April 1990

Vintage	Release Date
January 1987	January 16, 1987
February 1987	February 17, 1987
March 1987	March 16, 1987
April 1987	April 16, 1987
May 1987	May 18, 1987
June 1987	N/A[3]
July 1987	July 16, 1987
August 1987	August 17, 1987
September 1987	September 16, 1987
October 1987	October 19, 1987
November 1987	November 17, 1987
December 1987	December 15, 1987
January 1988	January 19, 1988
February 1988	February 18, 1988
March 1988	March 17, 1988
April 1988	April 18, 1988
May 1988	May 17, 1988
June 1988	June 16, 1988
July 1988	July 18, 1988
August 1988	August 16, 1988
September 1988	September 15, 1988
October 1988	October 17, 1988
November 1988	November 16, 1988
December 1988	December 14, 1988

---

[3] We use N/A in those cases in which our usual high-frequency report (G.3) is missing, forcing us to use an alternative source which did not list the exact day of the release.

Table 4 (continued). Release Dates for Capacity Utilization Over the Period
Prior to April 1990

Vintage	Release Date
January 1989	January 18, 1989
February 1989	February 15, 1989
March 1989	March 16, 1989
April 1989	N/A
May 1989	May 15, 1989
June 1989	June 15, 1989
July 1989	July 14, 1989
August 1989	August 16, 1989
September 1989	September 15, 1989
October 1989	October 17, 1989
November 1989	November 14, 1989
December 1989	December 15, 1989
January 1990	January 17, 1990
February 1990	February 16, 1990
March 1990	March 16, 1990

IV. Relationship Between Monthly Capacity Utilization Vintages & RTDSM Quarterly Vintages

In early June 1999, the Philadelphia Fed released its real-time data set, consisting of quarterly vintages of quarterly observations of NIPA variables and some non-NIPA variables. These quarterly vintages contain the data available around the middle of the quarter.

In contrast, the monthly vintages of capacity utilization do not follow this timing convention. Rather, as described above, the exact day corresponding to the month of a capacity utilization vintage may be slightly before or after the middle of the month.

If we are willing to consider a *floating-date information set* (in which the exact day of the information set is given by the 15th, when the day of the release of the capacity utilization report falls on the 15th or before, or by the date of the capacity utilization report, when that date exceeds 15th), a reasonable way to merge the quarterly vintages of the variables in RTDSM with the monthly vintages of capacity utilization is given in the table below.

Table 5. Merging Quarterly Vintages from the Real-Time Data Set With the Monthly Vintages of Capacity Utilization

Quarterly Vintages	Monthly Vintages of Capacity Utilization (column header name for each variable)
yyyy:Q1	CUTyyM2 / CUMyyM2
yyyy:Q2	CUTyyM5 / CUMyyM5
yyyy:Q3	CUTyyM8 / CUMyyM8
yyyy:Q4	CUTyyM11 / CUMyyM11

Consider an example for the first quarter of 2001. At the end of January 2001, the Bureau of Economic Analysis (BEA) released the advance estimate of nominal GDP for 2000:Q4. This is the last observation appearing in our quarterly vintage for nominal GDP, called

NOUTPUT01Q1. There is not another BEA report on GDP until the end of February. But on February 16, 2001, the Board released its industrial production and capacity utilization report, giving an observation for January 2001. There is not another capacity utilization report until mid-March. Thus, on February 16, 2001, analysts' information set consisted of NOUTPUT01Q1, CUT01M2, and CUM01M2. Analysts knew the value of advance GDP for 2000:Q4 and the initial-release values of capacity utilization (and industrial production) for January 2001.

Caveat: The timing given above will work for all variables except the monetary aggregates and reserves. The reason is that the observations for these variables are revised on a weekly basis, so adjusting the date of the information to a date after the 15th might yield slightly different values of these variables, had we actually collected the data on a date after the 15th.

V. Our Methodology for Incorporating Corrections to Federal Reserve Board Errors

Occasionally, the Federal Reserve Board's G.3 / G.17 report contains errors in the reported data. In general, we do not know whether such errors are due to computational or typographical mistakes. When Board staff discover such errors, they report the errors and the corrections in a subsequent release. Our policy on incorporating this new information is as follows: When we discover a G.3 / G.17 that reports corrections to previously published data, we incorporate such corrections into the vintage corresponding to that report. Subsequent vintages reflect the correction as well. On the premise that the corrections would not have been known at the time of previous vintages, w*e do not adjust the observations in previous vintages*.

VI. Quality of the Data

In our judgment, these capacity utilization data 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. Some subtle errors possibly remain, and users should examine the data carefully for outliers that we may have overlooked.

VII. SIC vs. NAICS

On December 5, 2002, the Federal Reserve Board published a (benchmark) revision to the capacity utilization series. Among other things, the revision represented a switch from the 1987 Standard Industrial Classification (SIC) system to the 2002 North American Industry Classification System (NAICS). Unlike the change to NAICS for other variables, Board staff did *not* change the definitions of the total and manufacturing capacity utilization series. Instead, the Board now reports an additional special component of capacity utilization in the manufacturing sector, measured according to the NAICS definition. RTDSM does not include this special component. Thus, in RTDSM, recent vintages of the total and manufacturing series are based on the (old) SIC definition.

Questions about the data may be addressed to:

> *Tom Stark*
> *Assistant Director and Manager*
> *Real-Time Data Research Center*
> *Research Department*
> *Federal Reserve Bank of Philadelphia*
> *Ten Independence Mall*
> *Philadelphia, PA 19106-1574*
> *Tel: (215) 574-6436*
> *E-mail: Tom.Stark@phil.frb.org*

The remainder of this documentation discusses any special features of the capacity utilization data.

CUTyyMm—Capacity Utilization, Total Industry

1.   Seasonally adjusted, monthly, percent of capacity, percentage points.

2.   First Vintage: July 1983

3.   First Observation: Varies by vintage (see Table 1).

4.   High-Frequency Source: Federal Reserve Board of Governors'
                                      G.3 (vintages prior to April 1990)
                                      G.17 (vintages from April 1990 to present)

5.   Deep-History Source: Varies by benchmark revision (see Table 3)

6.   Vintage Names: CUT*yy*M*mm,* 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).

7.   Vintage Dates: Each vintage corresponds with the day the
                                      data are released that month.

Special Notes

1.   **Vintages prior to CUT83M7.** The Federal Reserve Board did not define capacity utilization for total industry prior to its G.3 release of July 18, 1983.

2.   **CUT90M5—Correction to Observation for 1989:10.** The original value of the observation for 1989:10, as reported in the 4/17/90 G.17, was 83.4. The Federal Reserve Board corrected this observation in its release of May 15, 1990. The corrected value, which appears in RTDSM starting with the vintage of May 1990, is 83.3. In keeping with our philosophy of not recording values until they are known, we do not make the correction in the previous vintage.

3.   **CUT91M2—Unusual Revisions.** This vintage records some unusual revisions, extending back to early 1990, as reported in the Board's G.17 release of February 15, 1991.

4.   **CUT96M5—Unusual Revisions.** This vintage records some unusual revisions, extending back to 1995, as reported in the Board's G.17 release of May 15, 1996.

CUMyyMm—Capacity Utilization, Manufacturing

1.   Seasonally adjusted, monthly, percent of capacity, percentage points.

2.   First Vintage: August 1979

3.   First Observation: Varies by vintage (see Table 2)

4.   High-Frequency Source: Federal Reserve Board of Governors'
                                    G.3 (vintages prior to April 1990)
                                    G.17 (vintages from April 1990 to present)

5.   Deep-History Source: Varies by benchmark revision (see Table 3)

6.   Vintage Names: CUM*yy*M*mm,* 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).

7.   Vintage Dates: Each vintage corresponds with the day the
                                    data are released that month.

Special Notes

1.   **CUM80M9—Unusual Revisions.** This vintage records some unusual revisions, extending back to 1979, as reported in the Board's G.3 release of September 17, 1980.

2.   **CUM81M9—Unusual Revisions**. This vintage records some unusual revisions, extending back to 1980, as reported in the Board's G.3 release of September 17, 1981.

3.   **CUM91M2—Unusual Revisions.** This vintage records some unusual revisions, extending back to early 1990, as reported in the Board's G.17 release of February 15, 1991.

4.	**CUM96M5—Unusual Revisions.** This vintage records some unusual revisions, extending back to 1995, as reported in the Board's G.17 release of May 15, 1996.

Tom Stark
Assistant Director and Manager
Real-Time Data Research Center
Research Department
Federal Reserve Bank of Philadelphia
Ten Independence Mall
Philadelphia, PA 19106-1574
Tel: (215) 574-6436
E-mail: Tom.Stark@phil.frb.org