

Documentation:

Philadelphia Fed's Greenbook Data Set

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The Greenbook is produced before each meeting of the Federal Open Market Committee. It is produced by the research staff at the Board of Governors. The staff makes projections about future quarters in our economy. These projections are recorded in the Greenbook. The Greenbooks are available to the public after a lag of five years and can be found on the Board of Governor's website at: <http://www.federalreserve.gov/monetarypolicy/fomchistorical2009.htm>. The Philadelphia Fed's webpage includes an abbreviated version of the Greenbooks, which includes only forecast tables and charts. The number of Greenbooks produced per year can be anywhere from 15, for earlier years, to eight for the more recent years.

The Greenbook includes projections for a large number of macroeconomic variables. Fifteen of the variables included in the Greenbooks are also forecast in the Survey of Professional Forecasters. We choose these 15 variables to create the Philadelphia Fed's Greenbook Data Set.

This documentation provides information on how we created the Philadelphia Fed's Greenbook Data Set. This documentation has five sections:

- **Section 1** provides a description of the variables in our data set.
- **Section 2** discusses any changes to the definition of the variables.
- **Section 3** shows how we created the data set.
- **Section 4** discusses the organization of the data set and describes the two types of formats in which we present the data.
- **Section 5** discusses some caveats.

1. Description of the Variables

There are 15 variables in the Philadelphia Fed’s Greenbook Data Set. As mentioned, these variables are also forecast in the Survey of Professional Forecasters. Table 1 below contains the names of the variables as presented in the data set (first column), the variable’s long name (second column), along with a description of the variable and its transformation (third column). Depending on the format of the file you download, you will either find an excel file with worksheets named for each variable (row format) or you will find excel files named for each variable (column format). We also indicate the first Greenbook publication date (“First Greenbook”) in which the variable appears over our sample of Greenbooks from 1967 to present: Missing values in our data set mean the variable does not appear in the Greenbook.

Table 1: Variables in the Philadelphia Fed’s Greenbook Data Set

| Variable Name | Long Name | Description |
|----------------------|------------------------------------|--|
| gRGDP | Real Gross Domestic Product | Greenbook projections for quarter-over-quarter growth in real GDP, chain weight (annualized percentage points). Before 1992Q1: Real GNP, fixed weight 1992Q1 - 1995Q4: Real GDP, fixed weight. First Greenbook: March 29, 1967 |
| gPGDP | Gross Domestic Product Price Index | Greenbook projections for quarter-over-quarter growth in price index for GDP, chain weight (annualized percentage points) Before 1992Q1: Price index for GNP, implicit deflator 1992Q1 - 1996Q1: price index for GDP, implicit deflator First Greenbook: March 29, 1967 |
| UNEMP | Unemployment | Greenbook projections for the unemployment rate (percentage points). First Greenbook: March 29, 1967 |
| gPCPI | Headline Consumer Price Index | Greenbook projections for quarter-over-quarter headline CPI inflation (annualized percentage points) First Greenbook: October 12, 1979 |
| | | |

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|----------------|--|--|
| gPCPIX | Core Consumer Price Index | Greenbook projections for quarter-over-quarter core CPI inflation (annualized percentage points) First Greenbook: February 5, 1986 |
| gPPCE | Headline Personal Consumption Expenditures Price Index | Greenbook projections for quarter-over-quarter headline PCE inflation, chain weight (annualized percentage points) First Greenbook: January 27, 2000 |
| gPPCEX | Core Personal Consumption Expenditures Price Index | Greenbook projections for quarter-over-quarter core PCE inflation, chain weight (annualized percentage points) First Greenbook: January 27, 2000 |
| gRPCE | Real Personal Consumption Expenditures | Greenbook projections for quarter-over-quarter growth in real personal consumption expenditures, chain weight (annualized percentage points) Before 1996Q1: Fixed weight First Greenbook: June 14, 1978 |
| gRBF | Real Business Fixed Investment | Greenbook projections for quarter-over-quarter growth in real business fixed investment, chain weight (annualized percentage points) Before 1996Q1: Fixed weight First Greenbook: June 14, 1978 |
| gRRES | Real Residential Investment | Greenbook projections for quarter-over-quarter growth in real residential investment, chain weight (annualized percentage points) Before 1996Q1: Fixed weight First Greenbook: June 14, 1978 |
| gRGOVF | Real Federal Government Consumption and Gross Investment | Greenbook projections for quarter-over-quarter growth in real federal government consumption and gross investment, chain weight (annualized percentage points) Before 1996Q1: Real federal government purchases of goods and services, fixed weight First Greenbook: June 14, 1978 |
| gRGOVSL | Real State and Local Government Consumption and Gross Investment | Greenbook projections for quarter-over-quarter growth in real state & local government consumption and gross investment, chain weight (annualized percentage points) Before 1996Q1: Real state and local government purchases of goods and services, fixed weight First Greenbook: June 14, 1978 |
| | | |

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|---------------|--------------------------------------|--|
| gNGDP | Nominal Gross Domestic Product | Greenbook projections for quarter-over-quarter growth in nominal GDP (annualized percentage points) Before 1992Q1: Nominal GNP First Greenbook: March 29, 1967 |
| HSTART | Housing Starts | Greenbook projections for housing starts (millions of units) First Greenbook: April 26, 1967 |
| gIP | Industrial Production Index | Greenbook projections for quarter-over-quarter growth in the industrial production index (annualized percentage points) First Greenbook: April 26, 1967 |

Note on calculations for growth rates: We have recorded the growth rates as they are presented in the Greenbook for each variable. To calculate the growth rates manually let X_t denote the period- t observation for the level of variable X . The subscript t indexes a quarterly observation date. The growth rate of variable X is then calculated as follows:

$$G_t = 100.0 \times \left[\left(\frac{X_t}{X_{t-1}} \right)^4 - 1 \right]$$

2. Definitional and Conceptual Changes

Some variables in this data set have had changes to their definition or concept. Between the years 1964-2009, two big benchmark revisions were made. On December 4, 1991, the Bureau of Economic Analysis (BEA) released a comprehensive revision to the national income and product accounts. Among other things, the revision changed the headline U.S. output concept from Gross National Product (GNP) to Gross Domestic Product (GDP). Prior to the Greenbook produced on December 11, 1991, GNP and its components were used instead of GDP and its components in our data set. On January 19, 1996, the BEA released a comprehensive

revision to the national accounts. This revision introduced the chain-weight aggregation concept to the macroeconomic variables in the national income and product accounts. Table 2 lists the Greenbook variables affected by the revisions and explains in detail how we constructed the data set accordingly. The first column lists the variable names, while the second column gives detail about the variable, specifically indicating which calculation or definition we used in our data set. The dates refer to Greenbook publication dates.

Table 2: Variables Subject to a Change in Definition

| Variable Name | Revision |
|----------------------|---|
| gRGDP | 03/29/1967 - 12/11/1991: GNP was measured using fixed weights. 12/11/1991 - 01/26/1996: GDP was measured using fixed weights. 01/26/1996 - Present: GDP was measured using chain weights. |
| gPGDP | 03/29/1967 - 12/11/1991: GNP was measured using fixed weights. 12/11/1991 - 05/16/1996: GDP was measured using fixed weights. 05/16/1996 - Present: GDP was measured using chain weights. |
| gNGDP | 03/29/1967 - 12/11/1991: GNP was measured using fixed weights. 12/11/1991 - 01/26/1996: GDP was measured using fixed weights. 01/26/1996 - Present: GDP was measured using chain weights. |
| gRBF | 06/14/1978 - 01/26/1996: Calculations made on a fixed weights basis. 01/26/1996 - Present: Calculations made on a chain weighted basis |
| gRRES | 06/14/1978 - 01/26/1996: Calculations made on a fixed weights basis. 01/26/1996 - Present: Calculations made on a chain weighted basis |
| gRGOVF | 06/14/1978 - 01/26/1996: Calculations made on a fixed weights basis. 01/26/1996 - Present: Calculations made on a chain weighted basis |
| gRGOVSL | 06/14/1978 - 01/26/1996: Calculations made on a fixed weights basis. 01/26/1996 - Present: Calculations made on a chain weighted basis |

3. Our Methods for Constructing the Data Set

To create the data set we printed hard copies of the Greenbook forecast tables from the Philadelphia Fed's webpage at: <http://www.phil.frb.org/research-and-data/real-time-center/greenbook-data/pdf-data-set.cfm>. Figures 1 and 2 are copies of pages from the March 21, 1996 Greenbook.

Notice the publication date at the top right corner of every page. Notice also that the Greenbook forecast tables list the variable forecast and the quarters for the data, which may represent an historical quarter or a forecast quarter.

We used the following procedures to record the historical and forecast values:

1. Locate the "current quarter," the quarter in which the Greenbook was published. In figures 1-2, the current quarter is 1996 Q1.
2. Enter the values for the four quarters before the current quarter.
3. Enter the values for the current quarter and all following quarters
4. Repeat the procedure for each Greenbook.

4. Alternative Formats for the Data Set: Row Format and Column Format

We created two different formats of the data set. We will refer to the first as the “row format” and the second as the “column format”. The two formats differ in the way the data are presented. The alternative formats were created to provide data users additional flexibility. Some researchers will prefer the row format; others will prefer the column format.

Row Format: Each row gives the values from a different Greenbook. The Excel workbook for the row format contains 16 worksheets. The first worksheet ("Documentation") includes descriptive information about the Greenbook projections, variable names, data transformations, units of the data, and how the data are organized. The next 15 worksheets contain the Greenbook historical values and projections: There is one worksheet for each variable. The name of the worksheets are the shorthand names for the variables. Each worksheet organizes the data in the same manner: (1) Each row corresponds to a different Greenbook publication date; (2) The columns give historical and forecasts values for that Greenbook. For each Greenbook, the data set provides values for (at most) the four quarters that precede the nowcast quarter, the nowcast quarter, and (at most) the following nine quarters. Figure 3 shows a snapshot of the values for the quarter-over-quarter growth of real GDP. We highlight the Greenbook published on March 21, 1996. Notice the headers at the top of the snapshot. Each publication date is expressed as `yyyymmdd`. March 21, 1996 is expressed as `19960321`. Table 3 below explains what the headers indicate.

Table 3: Column Headers for Row Format

| Variables | Description |
|------------------|--|
| DATE | Year and quarter of the Greenbook publication (T) |
| xxxB1 | Greenbook projection/estimate for one quarter before Greenbook publication date (T-1) |
| xxxB2 | Greenbook projection/estimate for two quarters before Greenbook publication date (T-2) |
| xxxB3 | Greenbook projection/estimate for quarter T-3 |
| xxxB4 | Greenbook projection/estimate for quarter T-4 |
| xxxF0 | Greenbook projection for the current quarter (T), defined as the quarter in which the Greenbook is published |
| xxxF1 | Greenbook projection for the following quarter (T+1) |
| xxxF2 | Greenbook projection for quarter T+2 |
| . | |
| . | |
| . | |
| xxxF9 | Greenbook projection for quarter T+9 |

Note: xxx denotes a root name, as given above under "worksheets."

Column Format: Each column gives the values from a different Greenbook. There are 15 excel files, one for each variable. Each file is named using the shorthand name of the variable and a range of dates specifying which Greenbooks are included in the file. They all contain one worksheet. In each worksheet, we list the Greenbook publication date as the header in the column, again expressed as yyyyymmdd. Each column represents the historical and forecast values from that Greenbook. The left-most column shows the corresponding date for the observation. Figure 4 shows a snapshot of the Greenbook data for real GDP growth. We highlight the observations from the Greenbook for March 21, 1996.

Looking closely at figures 3 and 4, notice that the highlighted values in both figures correspond to the same Greenbook. In the figures, the historical values and projections of the growth rate of real GDP for the March 21, 1996 Greenbook are highlighted.

First Forecast Quarter. Because our data set records Greenbook historical values *and* Greenbook forecast values, it can be hard to determine when the forecast values begin. The following textbox provides some discussion on this issue.

Greenbook Historical and Forecast Values: When Do the Forecasts Begin?

As noted above, the “Philadelphia Fed’s Greenbook Data Set” includes Greenbook historical values and forecast values. For each Greenbook, we record these values as one continuous sequence of numbers, running from left to right (row format) or top to bottom (column format). It can be difficult to determine when the historical values end (and the forecasts begin).

We offer the following advice:

- The Greenbook publication date that we record in the files identifies the nowcast quarter. The nowcast quarter is always a quarter that must be forecast in the Greenbook.
- When the Greenbook is published very early in the quarter: The value we record for the quarter before the nowcast quarter is also a projection.
- When the Greenbook is published later in the quarter: The value we record for the quarter before the nowcast quarter could be a historical value or a forecast value, depending on exactly when in the quarter the Greenbook is published and the historical release date for the variable in question.

Two instructive examples follow:

- The U.S. Bureau of Labor Statistics (BLS) usually publishes the monthly unemployment rate on the first Friday of the month. The historical value is that for the previous month. When the Greenbook is published in January *after* the first Friday when the BLS released the unemployment rate for December, the Greenbook forecasters likely knew the fourth-quarter average unemployment rate of the previous year. The Greenbook nowcast projection is for the first quarter, and the unemployment rate listed in the Greenbook for the previous quarter (fourth quarter) should be a historical value comprised of the average of the October, November, and December unemployment rates.
- The U.S. Bureau of Economic Analysis publishes its advance estimate for quarterly GDP and its components at the end of the first month of the next quarter. When the Greenbook is published in, say, mid-January, before the GDP report: The nowcast projection is for the first quarter, but the previous quarter (fourth quarter) is also a forecast quarter for GDP. (In the same Greenbook, as noted in the previous bullet point, the Greenbook value for the quarterly unemployment rate in the fourth quarter is likely a historical value.)

5. Caveats

This section discusses some caveats within the data recorded in our dataset. A caveat falls under one of three categories: published corrections, manual corrections, and miscellaneous.

Published Corrections: Every published Greenbook contains a supplemental section. This section may contain corrections made to the values of variables within the Greenbook. The word “corrections” or “revised” is written explicitly on the page. In such cases, we record the corrected value reported in the supplement. Figure 5 shows an example of a supplement that includes corrections for the Greenbook published on January 15, 1975. The corrections reported in figure 5 include updated values for the industrial production index. Table 4 shows which Greenbook includes corrections that affect the variables in the Philadelphia Fed’s Greenbook Data Set. The first column “Greenbook Date” specifies the publication date of the Greenbook affected, while the second column indicates which variables were affected by corrections.

Table 4: Greenbooks with Corrected Values

| Greenbook Date | Variable Affected |
|-----------------------|--|
| 19670717 | We use the revised Greenbook published on July 17, 1967 instead of the one published on July 12. |
| 19670809 | Housing Starts |
| 19670927 | Industrial Production |
| 19680228 | Nominal GNP |
| 19680807 | Housing Starts |
| 19691210 | Real GNP and Industrial Production |
| 19701209 | Industrial Production |
| 19720915 | Industrial Production |
| 19730618 | We use the revised Greenbook published on June 18, 1973 instead of the one published on June 13 (See also table 6) |
| 19750115 | Industrial Production |
| 19750212 | Industrial Production |
| 19770415 | We use the revised Greenbook published on April 15, 1977 instead of the one published on April 13 |
| 19791012 | Industrial Production |
| 19840926 | Industrial Production |
| 19910628 | We use the revised Greenbook published on June 28, 1991 instead of the one published on June 26. |
| 19920626 | We use the revised Greenbook published on June 26, 1992 instead of the one published on June 24. |
| 19930129 | We use the revised Greenbook published on January 29, 1993 instead of the one published on January 27. |
| 19940629 | We use the revised Greenbook published on June 30, 1994 instead of the one published on June 29. |

Manual Calculations: In some cases, we calculated the growth rates in our data set because they do not appear in the Greenbook. We follow the same method as the staff at the Board of Governors to calculate the growth rates. In many earlier Greenbooks, the historical values for the growth rate of real GNP and the level value for changes in nominal GNP are given. Using these values, we calculated the growth rate for nominal GNP and the GNP implicit deflator for quarters in which these values were missing. Table 5 indicates which Greenbooks were augmented using our manual calculations. The column titled “Greenbook Date” indicates which

published Greenbook is affected, while the second column indicates which variables were manually calculated and how.

Table 5: Greenbooks Augmented with Manual Calculations

| Greenbook Date | Variable Affected |
|-----------------------|--|
| 19720712 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19720913 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19721011 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19721115 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19750115 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19750212 | The growth rates for industrial production are missing in this Greenbook, as a result we calculate them using the level values for industrial production |
| 19751112 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19751210 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760211 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760310 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760414 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760512 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760616 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |
| 19760714 | Using the reported growth rates for real GNP we calculate nominal GNP and GNP Price Index |

Miscellaneous: There are Greenbooks worth mentioning that do not fall into the caveat categories of published corrections or manual calculations. These Greenbooks fall into our miscellaneous category. Sometimes the data presented in the Greenbooks are unreadable. We make a “judgment call” about which value to add into the dataset. Other times, the date of publication is in question. We again make a “judgment call” about which publication date to use. Judgment calls are based on prior knowledge on FOMC meetings and the Philadelphia Fed’s Real-Time Data Set for Macroeconomists (<http://www.phil.frb.org/research-and-data/real-time-center/real-time-data/>). Table 6 presents the Greenbooks that fall under the miscellaneous category. The first column indicates which published Greenbook was affected, while the second column indicates the miscellaneous item in the specified Greenbook.

Table 6: Miscellaneous Greenbooks

| Greenbook Date | Variable Affected |
|-----------------------|--|
| 19670927 | Corrections do not specify -3.1 for industrial production 1967 quarter II, but based on the Philadelphia Fed’s Real-Time Data Set we think Board staff meant -3.1 and not 3.1. |
| 19680206 | Historical data was not added to dataset since column headers were unreadable. |
| 19730618 | Revisions were made on June 18, 1973, but part of the document is unreadable, so instead we use values from the June 13, 1973 publication for unemployment and housing starts. |
| 19741009 | After close inspection we believe the value for industrial production for 1972 Q4 to be 13.8. |
| 19790315 | It appears as if another Greenbook was published on March 31, 1979 but we believe the date to be a typographical error. |
| 19800130 | It appears as if another Greenbook was published on January 3, 1980 but we believe the date to be a typographical error. |
| 19830323 | It appears as if page I-11 is from a Greenbook published on March 23, 1982 but we believe the date to be a typographical error. |

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Figure 1: Page from the March 21, 1996 Greenbook

STRICTLY CONFIDENTIAL <FR>
CLASS II FOMCREAL GROSS DOMESTIC PRODUCT AND RELATED ITEMS, QUARTERLY VALUES
(Seasonally adjusted, annual rate except as noted)

March 21, 1996

| Item | Units | 1993 Q1 | 1993 Q2 | 1993 Q3 | 1993 Q4 | 1994 Q1 | 1994 Q2 | 1994 Q3 | 1994 Q4 | 1995 Q1 | 1995 Q2 |
|----------------------------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| EXPENDITURES | | | | | | | | | | | |
| Nominal GDP | Bill. \$ | 6442.8 | 6503.2 | 6571.3 | 6683.7 | 6772.8 | 6885.0 | 6987.6 | 7080.0 | 7147.8 | 7196.5 |
| Real GDP | Bill. Ch. \$ | 6327.0 | 6353.7 | 6390.4 | 6463.9 | 6504.6 | 6581.5 | 6639.5 | 6691.3 | 6701.6 | 6709.4 |
| Real GDP | % change | 0.0 | 1.7 | 2.3 | 4.7 | 2.5 | 4.8 | 3.6 | 3.2 | 0.6 | 0.5 |
| Gross domestic purchases | | 0.9 | 2.4 | 3.7 | 4.4 | 3.4 | 5.4 | 3.6 | 2.7 | 1.4 | 0.9 |
| Final sales | | -0.8 | 1.5 | 2.3 | 4.8 | 1.2 | 2.8 | 4.2 | 3.6 | 0.7 | 1.8 |
| Private dom. final purch. | | 1.4 | 2.8 | 4.4 | 5.4 | 3.7 | 4.5 | 3.6 | 4.1 | 2.1 | 2.6 |
| Personal cons. expend. | | 0.7 | 2.7 | 3.8 | 2.8 | 2.6 | 3.6 | 2.5 | 3.3 | 0.8 | 3.4 |
| Durables | | 0.8 | 11.2 | 7.3 | 10.2 | 5.8 | 4.3 | 5.6 | 12.6 | -8.7 | 7.0 |
| Nondurables | | -0.9 | 2.3 | 2.9 | 1.7 | 3.8 | 3.3 | 4.0 | 3.2 | 2.4 | 1.9 |
| Services | | 1.6 | 1.3 | 3.6 | 1.9 | 1.4 | 3.6 | 1.2 | 1.4 | 2.1 | 3.4 |
| Business fixed invest. | | 6.0 | 6.3 | 4.7 | 17.5 | 7.3 | 7.1 | 13.7 | 12.2 | 15.3 | 3.6 |
| Producers' dur. equip. | | 7.1 | 11.4 | 6.3 | 21.7 | 15.6 | 4.1 | 19.3 | 11.9 | 17.4 | 3.7 |
| Nonres. structures | | 3.5 | -5.3 | 0.8 | 7.5 | -11.8 | 15.7 | 0.2 | 13.0 | 9.9 | 3.4 |
| Res. structures | | 2.1 | -5.1 | 13.2 | 24.3 | 12.8 | 12.7 | -1.8 | -0.1 | -6.3 | -13.3 |
| Exports | | 0.4 | 7.9 | -7.9 | 21.5 | -0.6 | 14.8 | 12.2 | 15.3 | 2.6 | 4.6 |
| Imports | | 9.6 | 14.5 | 4.9 | 17.0 | 7.5 | 19.1 | 11.0 | 9.3 | 8.7 | 7.7 |
| Government purchases | | -4.7 | 0.2 | 1.0 | 1.5 | -4.2 | -0.8 | 7.0 | -1.4 | -1.1 | 0.9 |
| Federal | | -13.1 | -4.9 | -2.9 | -0.7 | -11.1 | -5.3 | 11.5 | -5.9 | -6.3 | -1.1 |
| Defense | | -15.6 | -5.2 | -5.8 | -0.5 | -17.0 | 0.7 | 13.3 | -16.1 | -7.0 | 0.9 |
| State and local | | 1.7 | 3.9 | 3.8 | 3.0 | 0.7 | 2.2 | 4.2 | 1.6 | 2.3 | 2.1 |
| Change in bus. invent | Bill. Ch. \$ | 19.4 | 21.6 | 20.1 | 18.0 | 40.8 | 75.1 | 64.9 | 57.9 | 54.5 | 30.6 |
| Nonfarm | | 26.0 | 26.7 | 30.9 | 22.1 | 29.8 | 54.1 | 50.1 | 53.3 | 58.1 | 33.8 |
| Net exports | | -55.2 | -67.0 | -89.1 | -86.2 | -101.3 | -112.2 | -113.3 | -105.8 | -119.0 | -126.8 |
| Nominal GDP | % change | 3.8 | 3.8 | 4.3 | 7.0 | 5.4 | 6.8 | 6.1 | 5.4 | 3.9 | 2.8 |
| EMPLOYMENT AND PRODUCTION | | | | | | | | | | | |
| Nonfarm payroll employ. | Millions | 109.7 | 110.4 | 111.0 | 111.8 | 112.7 | 113.6 | 114.5 | 115.3 | 116.1 | 116.4 |
| Unemployment rate | % | 7.2 | 7.1 | 6.8 | 6.6 | 6.6 | 6.2 | 6.0 | 5.6 | 5.5 | 5.7 |
| Industrial prod. index | % change | 3.7 | 0.5 | 3.2 | 5.5 | 8.4 | 7.0 | 4.6 | 6.4 | 3.9 | -1.4 |
| Capacity util. rate-mfg | % | 80.6 | 80.3 | 80.4 | 81.1 | 82.2 | 83.2 | 83.4 | 84.3 | 82.9 | 82.6 |
| Housing starts | Millions | 1.16 | 1.25 | 1.31 | 1.47 | 1.36 | 1.44 | 1.47 | 1.51 | 1.31 | 1.28 |
| Light motor vehicle sales | | 13.23 | 14.11 | 13.69 | 14.53 | 15.45 | 14.76 | 14.65 | 15.44 | 14.90 | 14.35 |
| INCOME AND SAVING | | | | | | | | | | | |
| Nominal GNP | Bill. \$ | 6458.4 | 6512.3 | 6584.8 | 6684.5 | 6773.6 | 6876.3 | 6977.6 | 7062.2 | 7140.5 | 7187.0 |
| Nominal GNP | % change | 4.3 | 3.4 | 4.5 | 6.2 | 5.4 | 6.2 | 6.0 | 4.9 | 4.5 | 2.6 |
| Nominal personal income | | -5.7 | 8.8 | 2.9 | 8.3 | -3.3 | 13.6 | 4.2 | 6.5 | 7.1 | 4.5 |
| Real disposable income | | -8.1 | 5.2 | 1.1 | 5.0 | -5.3 | 10.1 | 2.1 | 4.0 | 3.6 | 0.0 |
| Personal saving rate | % | 4.2 | 4.8 | 4.2 | 4.7 | 2.8 | 4.2 | 4.1 | 4.2 | 4.8 | 4.0 |
| Corp. profits, IVA & CCAAdj | % change | -1.2 | 22.9 | 19.7 | 42.2 | -37.5 | 84.7 | 14.5 | 14.6 | -6.4 | 1.1 |
| Profit share of GNP | % | 6.6 | 6.9 | 7.1 | 7.7 | 6.7 | 7.7 | 7.9 | 8.1 | 7.8 | 7.8 |
| Federal govt. surpl./def. | Bill. \$ | -283.7 | -249.2 | -253.5 | -232.4 | -212.9 | -169.9 | -186.3 | -190.4 | -173.3 | -160.5 |
| State/local surpl./def. | | 80.5 | 89.1 | 94.9 | 115.0 | 94.8 | 105.2 | 99.6 | 99.3 | 99.0 | 99.0 |
| Ex. social ins. funds | | 13.3 | 22.0 | 28.1 | 48.5 | 29.0 | 41.1 | 37.9 | 39.4 | 40.2 | 40.9 |
| PRICES AND COSTS | | | | | | | | | | | |
| GDP implicit deflator | % change | 3.8 | 2.1 | 1.9 | 2.2 | 2.8 | 1.9 | 2.4 | 2.2 | 3.2 | 2.3 |
| CPI | | 3.1 | 2.8 | 1.7 | 3.4 | 2.2 | 2.5 | 3.6 | 2.2 | 3.2 | 3.2 |
| Ex. food and energy | | 3.5 | 3.5 | 2.4 | 2.9 | 2.9 | 2.9 | 3.1 | 2.3 | 3.3 | 3.6 |
| ECI, hourly compensation | | 4.2 | 3.5 | 3.4 | 3.4 | 3.0 | 3.4 | 3.3 | 2.6 | 2.3 | 2.9 |
| Nonfarm business sector | | | | | | | | | | | |
| Output per hour | | -3.9 | -1.7 | 2.1 | 1.6 | -2.5 | 1.9 | 2.6 | 0.9 | -1.1 | 3.0 |
| Compensation per hour | | 1.0 | 2.7 | 2.0 | 1.1 | 3.3 | 2.1 | 1.2 | 3.3 | 3.7 | 5.4 |
| Unit labor cost | | 5.1 | 4.5 | -0.1 | -0.5 | 5.9 | 0.2 | -1.4 | 2.4 | 4.9 | 2.3 |

Figure 2: Page from the March 21, 1996 Greenbook

I-20

| STRICTLY CONFIDENTIAL <FR> CLASS II FOMC | | REAL GROSS DOMESTIC PRODUCT AND RELATED ITEMS, QUARTERLY VALUES (Seasonally adjusted, annual rate except as noted) | | | | | | | | | | March 21, 1996 |
|---|--------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------------|
| Item | Units | Projected | | | | | | | | | | |
| | | 1995 Q3* | 1995 Q4 | 1996 Q1 | 1996 Q2 | 1996 Q3 | 1996 Q4 | 1997 Q1 | 1997 Q2 | 1997 Q3 | 1997 Q4 | |
| EXPENDITURES | | | | | | | | | | | | |
| Nominal GDP | bill. \$ | 7298.5 | 7335.9 | 7416.7 | 7523.0 | 7603.8 | 7695.2 | 7788.5 | 7880.1 | 7962.6 | 8061.7 | |
| Real GDP | bill. Ch. \$ | 6768.3 | 6773.3 | 6797.9 | 6855.3 | 6885.6 | 6925.2 | 6960.6 | 6996.3 | 7026.7 | 7066.7 | |
| Real GDP | % change | 3.6 | 0.3 | 1.5 | 3.4 | 1.8 | 2.3 | 2.1 | 2.1 | 1.8 | 2.3 | |
| Gross domestic purchases | | 2.8 | -0.8 | 1.8 | 3.5 | 2.3 | 2.0 | 2.0 | 2.2 | 2.3 | 2.2 | |
| Final sales | | 3.4 | 1.9 | 2.2 | 2.1 | 1.6 | 2.4 | 2.1 | 2.0 | 1.7 | 2.4 | |
| Private dom. final purch. | | 3.3 | 1.8 | 2.9 | 2.5 | 2.5 | 2.3 | 2.5 | 2.4 | 2.5 | 2.5 | |
| Personal cons. expend. | | 2.8 | 1.1 | 2.5 | 2.4 | 2.7 | 2.5 | 2.5 | 2.3 | 2.4 | 2.5 | |
| Durables | | 9.4 | 2.1 | 9.5 | 3.4 | 4.8 | 3.4 | 2.9 | 2.4 | 3.3 | 3.5 | |
| Nondurables | | 0.5 | -0.7 | -0.7 | 1.8 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| Services | | 2.6 | 1.8 | 2.7 | 2.5 | 2.5 | 2.5 | 2.5 | 2.4 | 2.4 | 2.4 | |
| Business fixed invest. | | 5.2 | 5.4 | 4.2 | 1.9 | 2.9 | 2.9 | 4.0 | 3.8 | 3.7 | 3.5 | |
| Producers' dur. equip. | | 4.8 | 6.2 | 3.9 | 2.2 | 3.1 | 3.2 | 4.8 | 4.7 | 4.6 | 4.8 | |
| Nonres. structures | | 6.2 | 3.4 | 5.2 | 1.0 | 2.3 | 2.0 | 1.7 | 1.1 | 1.1 | -0.2 | |
| Res. structures | | 9.2 | 4.4 | 6.6 | 6.7 | -2.8 | -2.5 | -1.2 | 0.0 | 0.8 | 0.4 | |
| Exports | | 8.0 | 10.5 | 5.1 | 9.5 | 4.1 | 11.6 | 7.0 | 10.8 | 5.0 | 11.3 | |
| Imports | | 1.0 | 0.6 | 7.4 | 9.8 | 7.6 | 7.9 | 6.2 | 10.7 | 8.3 | 9.2 | |
| Government purchases | | -0.7 | -3.7 | 0.7 | 0.7 | 0.2 | 1.1 | 0.3 | 0.9 | 0.5 | 1.0 | |
| Federal | | -5.9 | -11.9 | -3.2 | -1.9 | -3.4 | -0.9 | -3.5 | -2.0 | -3.1 | -2.3 | |
| Defense | | -8.1 | -11.6 | 0.5 | -5.2 | -3.6 | -1.3 | -3.9 | -2.5 | -2.9 | -1.6 | |
| State and local | | 2.7 | 1.7 | 3.0 | 2.2 | 2.2 | 2.1 | 2.5 | 2.5 | 2.5 | 2.7 | |
| Change in bus. invent. | bill. Ch. \$ | 33.2 | 9.5 | -2.7 | 20.0 | 23.9 | 22.1 | 21.3 | 22.0 | 23.5 | 22.4 | |
| Nonfarm | | 38.3 | 12.7 | -1.1 | 19.1 | 21.5 | 19.6 | 18.7 | 19.4 | 20.8 | 19.6 | |
| Net exports | | -114.3 | -95.9 | -102.0 | -104.9 | -113.6 | -108.6 | -108.8 | -111.4 | -120.6 | -118.8 | |
| Nominal GDP | % change | 5.8 | 2.1 | 4.5 | 5.9 | 4.4 | 4.9 | 4.9 | 4.8 | 4.3 | 5.1 | |
| EMPLOYMENT AND PRODUCTION | | | | | | | | | | | | |
| Nonfarm payroll employ. | billions | 116.8 | 117.2 | 117.6 | 118.0 | 118.3 | 118.7 | 119.0 | 119.3 | 119.7 | 120.0 | |
| Unemployment rate | % | 5.6 | 5.5 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | |
| Industrial prod. index | % change | 3.2 | 0.4 | 0.9 | 5.3 | 2.7 | 3.1 | 2.7 | 2.7 | 2.2 | 3.2 | |
| Capacity util. rate-mfg | % | 82.6 | 82.0 | 81.4 | 81.7 | 81.5 | 81.4 | 81.5 | 81.5 | 81.4 | 81.6 | |
| Housing starts | billions | 1.42 | 1.41 | 1.47 | 1.44 | 1.40 | 1.39 | 1.39 | 1.39 | 1.38 | 1.38 | |
| Light motor vehicle sales | | 15.04 | 14.91 | 15.00 | 14.60 | 14.65 | 14.70 | 14.74 | 14.75 | 14.77 | 14.80 | |
| INCOME AND SAVING | | | | | | | | | | | | |
| Nominal GNP | bill. \$ | 7283.0 | 7334.9 | 7414.7 | 7514.3 | 7596.1 | 7682.6 | 7778.6 | 7865.0 | 7950.6 | 8043.1 | |
| Nominal GNP | % change | 5.5 | 2.9 | 4.4 | 5.5 | 4.4 | 4.6 | 5.1 | 4.5 | 4.4 | 4.7 | |
| Nominal personal income | | 5.0 | 5.3 | 6.3 | 4.8 | 4.9 | 4.6 | 5.7 | 4.7 | 5.0 | 5.5 | |
| Real disposable income | | 4.5 | 3.8 | 3.8 | 0.1 | 3.5 | 1.6 | 3.2 | 1.7 | 2.3 | 2.3 | |
| Personal saving rate | % | 4.4 | 4.9 | 5.2 | 4.7 | 4.9 | 4.7 | 4.9 | 4.7 | 4.7 | 4.7 | |
| Corp. profits, IVA & CCAadj | % change | 44.1 | -12.6 | -5.5 | 14.7 | -0.2 | 7.7 | 5.3 | 4.1 | 1.8 | 0.4 | |
| Profit share of GNP | % | 8.4 | 8.1 | 7.9 | 8.1 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 7.9 | |
| Federal govt. surpl./def. | bill. \$ | -161.6 | -159.7 | -187.8 | -147.5 | -162.2 | -171.7 | -176.8 | -175.9 | -174.4 | -184.8 | |
| State/local surpl./def. | | 93.9 | 88.1 | 84.5 | 85.2 | 85.3 | 87.0 | 88.3 | 90.8 | 89.2 | 92.0 | |
| Ex. social ins. funds | | 35.8 | 30.5 | 27.2 | 28.3 | 28.7 | 30.7 | 32.3 | 35.0 | 33.6 | 36.6 | |
| PRICES AND COSTS | | | | | | | | | | | | |
| GDP implicit deflator | % change | 2.2 | 1.8 | 3.0 | 2.4 | 2.5 | 2.5 | 2.8 | 2.7 | 2.5 | 2.7 | |
| CPI | | 2.1 | 2.1 | 3.2 | 3.4 | 2.9 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Ex. food and energy | | 2.5 | 2.5 | 2.7 | 2.8 | 3.0 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | |
| ECI, hourly compensation | | 2.3 | 3.5 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | |
| Nonfarm business sector | | | | | | | | | | | | |
| Output per hour | | 1.7 | -1.0 | 2.1 | -0.4 | 0.6 | 1.4 | 1.1 | 1.1 | 0.6 | 1.3 | |
| Compensation per hour | | 4.3 | 3.0 | 6.4 | 0.8 | 3.7 | 3.6 | 3.9 | 3.8 | 3.8 | 3.9 | |
| Unit labor cost | | 2.5 | 3.5 | 4.2 | 1.2 | 3.1 | 2.1 | 2.8 | 2.6 | 3.1 | 2.5 | |

Figure 3: Screenshot of Philadelphia Fed Greenbook Data Set: Row Format

| DATE | gRGDPB4 | gRGDPB3 | gRGDPB2 | gRGDPB1 | gRGDPF0 | gRGDPF1 | gRGDPF2 | gRGDPF3 | gRGDPF4 | gRGDPF5 | gRGDPF6 | gRGDPF7 | gRGDPF8 | gRGDPF9 | GBdate |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| 1995.4 | 5.1 | 2.7 | 1.3 | 4.1 | 2.6 | 2.7 | 2.7 | 2.1 | 2.7 | 2.5 | 2.9 | 1.9 | 2 | #N/A | 19951108 |
| 1995.4 | 5.1 | 2.7 | 1.3 | 5.4 | 1.9 | 2.5 | 2.4 | 2 | 2.9 | 2.5 | 2.7 | 2.1 | 2.4 | #N/A | 19951214 |
| 1996.1 | 0.6 | 0.5 | 3.2 | 1.9 | 0.8 | 2 | 2 | 2.5 | 1.9 | 2.1 | 1.6 | 2.3 | #N/A | #N/A | 19960126 |
| 1996.1 | 0.6 | 0.5 | 3.6 | 0.3 | 1.5 | 3.4 | 1.8 | 2.3 | 2.1 | 2.1 | 1.8 | 2.3 | #N/A | #N/A | 19960321 |
| 1996.2 | 0.5 | 3.6 | 0.5 | 2.5 | 3.5 | 2 | 1.9 | 2.3 | 2.1 | 1.8 | 2.4 | #N/A | #N/A | #N/A | 19960516 |
| 1996.2 | 0.5 | 3.6 | 0.5 | 2.2 | 3.8 | 2.3 | 1.9 | 2.1 | 2.2 | 2 | 2.3 | #N/A | #N/A | #N/A | 19960626 |
| 1996.3 | 3.8 | 0.3 | 2 | 3.7 | 2.6 | 2 | 2 | 2.1 | 2.2 | 2.2 | #N/A | #N/A | #N/A | #N/A | 19960815 |
| 1996.3 | 3.8 | 0.3 | 2 | 4.7 | 2.4 | 2.2 | 2.1 | 2.1 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 19960918 |
| 1996.4 | 0.2 | 0 | 1.7 | 0.5 | 1.8 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | #N/A | 19961106 |

Table Notes: The figure shows a slice of the Philadelphia Fed Greenbook data set for quarter over quarter real GDP growth, organized in “row format.” Each row represents the observations and forecasts made in a specified Greenbook. The first column named “Date” refers to the year and quarter when the Greenbook was published. The last column labeled “GBdate” refers to the date the date when the Greenbook was published. The column labeled gRGDPF0 refers to the quarter in which the Greenbook was published, while the successive columns gRGDPFx refer to projections made for x quarters into the future. The Column labeled gRGDPB1 refers to the quarter before the Greenbook was published, while the preceding columns gRGDPBx refer to projections or observations for x quarters before the quarter the Greenbook was published.

Figure 4: Screenshot of Data set in Column Format

| Date | gRGDP_19951214 | gRGDP_19960126 | gRGDP_19960321 | gRGDP_19960516 | gRGDP_19960626 | gRGDP_19960815 |
|--------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1994.3 | | | | | | |
| 1994.4 | 5.1 | | | | | |
| 1995.1 | 2.7 | 0.6 | 0.6 | | | |
| 1995.2 | 1.3 | 0.5 | 0.5 | 0.5 | 0.5 | |
| 1995.3 | 5.4 | 3.2 | 3.6 | 3.6 | 3.6 | 3.8 |
| 1995.4 | 1.9 | 1.9 | 0.3 | 0.5 | 0.5 | 0.3 |
| 1996.1 | 2.5 | 0.8 | 1.5 | 2.5 | 2.2 | 2 |
| 1996.2 | 2.4 | 2 | 3.4 | 3.5 | 3.8 | 3.7 |
| 1996.3 | 2 | 2 | 1.8 | 2 | 2.3 | 2.6 |
| 1996.4 | 2.9 | 2.5 | 2.3 | 1.9 | 1.9 | 2 |
| 1997.1 | 2.5 | 1.9 | 2.1 | 2.3 | 2.1 | 2 |
| 1997.2 | 2.7 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 |
| 1997.3 | 2.1 | 1.6 | 1.8 | 1.8 | 2 | 2.2 |
| 1997.4 | 2.4 | 2.3 | 2.3 | 2.4 | 2.3 | 2.2 |
| 1998.1 | | | | | | |

Table Notes: The figure shows a slice of the Philadelphia Fed Greenbook data set for quarter over quarter real GDP growth, organized in “column format.” Each column represents the observations and forecasts made in a specified Greenbook. The column named “Date” shows the observation or forecast dates. The column headers gRGDP_YYYYMMDD refer to the variable and date when the Greenbook was published.

Figure 5: Page 11 of Supplement Section for the January 15, 1975 Greenbook

CORRECTIONS:

GROSS NATIONAL PRODUCT AND RELATED ITEMS

| | 1975 Proj. | 1975 | | | | 1976 | |
|---|---------------|--------------------------------|-------------|------------|------------|------------|------------|
| | | Projection | | | | I | II |
| | | I | II | III | IV | I | II |
| Disposable income | 1064.4 | 1019.7 | 1062.4 | 1088.8 | 1086.8 | 1110.4 | 1133.0 |
| Personal saving | 93.6 | 80.9 | 104.5 | 105.6 | 83.2 | 86.9 | 91.0 |
| Saving rate (per cent) | 8.8 | 7.9 | 9.8 | 9.7 | 7.7 | 7.8 | 8.0 |
| Corporate profits and I.V.A. | 90.5 | 89.6 | 83.3 | 90.9 | 98.2 | 102.6 | 104.8 |
| Corporate profits before tax | 115.9 | 119.5 | 111.0 | 115.0 | 118.0 | 119.5 | 119.5 |
| Federal government receipts and expenditures (NIA basis) | | | | | | | |
| Receipts | 288.2 | 294.0 | 270.2 | 277.5 | 311.2 | 321.0 | 324.8 |
| Surplus or deficit (-) | -47.8 | -29.7 | -58.9 | -63.7 | -38.9 | -35.9 | -38.6 |
| State and local government surplus or deficit (-), (NIA basis) | -2.1 | -2.2 | -3.1 | -2.5 | - .5 | - .9 | - .6 |
| Industrial production (1967=100) | 116.9 | 116.5 | 115.2 | 116.8 | 119.1 | 121.2 | 122.4 |
| Capacity utilization, mfg. (per cent) | 71.3 | 72.1 | 70.6 | 71.0 | 71.7 | 72.3 | 72.3 |
| Major materials (per cent) | 74.2 | 75.4 | 72.9 | 73.5 | 74.9 | 75.9 | 76.2 |
| | | -----In Per Cent Per Year----- | | | | | |
| Disposable income | 8.8 | 6.2 | 17.8 | 10.3 | - .7 | 9.0 | 8.4 |
| Corporate profits before tax | -17.7 | -32.8 | -25.6 | 15.2 | 10.8 | 5.2 | .0 |
| Federal government receipts and expenditures (NIA basis) | | | | | | | |
| Receipts | -1.2 | -3.6 | -28.7 | 11.3 | 58.2 | 13.2 | 4.8 |
| Industrial production | -5.9 | -15.8 | -4.2 | 5.6 | 8.1 | 7.3 | 3.9 |

NOTE: In the January 15 Greenbook, there were some computational errors in the GNP tables. This table shows corrected figures for Part I, pages 8, 9, 10, and 11.

*This page shows the corrections that were made to the industrial production index.