Impact on Business Cycle Timing and Magnitudes

With respect to business cycles since 1960, the revisions do not alter the peak and trough quarters (that is, the duration of upswings and downturns), but they do affect the amplitudes in each cycle. For almost every cycle, the change in amplitude results from the base-period shift. For the five contractions, the revised estimates show three periods with steeper declines than previously reported. As for the five expansions periods, all of them show less strength than previously thought.

Since the base-period shift is a major source of revision for all cycles, caution must be used when making comparisons involving several years data. As previously noted, the 1982 base prices give a more accurate picture of recent events, but are not fully suited for comparisons to the previous decade. What is interesting, though, is that the 1981-82 contraction turns out to be more severe, and the current expansion has less strength than previously thought.

Conclusion

The new data demonstrates a greater accuracy by reducing the statistical discrepancy, that is, the difference between GNP measured on the product side and GNP measured on the income side. On average, the yearly statistical discrepancy falls from 0.15 percent to 0.11 percent. Furthermore, adjustments for the timing problem associated with merchandise trade data, and for the misreporting on tax returns, provide good examples that the revisions supply a necessary update of the NIPA.

Although the 1865 benchmark revision does not drastically alter our view of the economy, it does provide some new and useful information. For example, gross investment as a percent of GNP is now higher than previously estimated. Although definitional changes do account for a portion of the increase, the new estimates might become a part of the current debate over tax incentives for business investment. Further, past comprehensive revisions, such as the 1976 revision, have provided a better picture of the service sector’s growing importance.

The effect of the current revision on government policies and business decisions will probably be small, but such an outcome could not be fully known beforehand. The comprehensive revisions, however, update the NIPA statistics to incorporate changing patterns in the economy, and are well worth the effort.

Further Reading


BULK RATE
U.S. Postage Paid
Cleveland, OH
Permit No. 389

Revising Constant-dollar Series

The statistical changes are the BEA’s self-described “outside feature” of the revisions. Shifting the base period for the price index series in the calculation of constant-dollar series is the most important statistical change. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Bureau of Economic Analysis (BEA), a part of the U.S. Commerce Department, produces the National Income and Product Accounts (NIPA) statistics. These statistics summarize the nation’s total economic activity, and provide statistical views of our gross national product (GNP) and personal income.

NIPA statistics are important economic tools. They provide information that helps government policymakers and business leaders to understand past and present economic activity, and to make decisions that have far-reaching effects in the economy. Aside from regularly scheduled revisions, the BEA also releases benchmark revisions approximately every five years, as new census data become available. The most recent benchmark revision took place in December 1985, the eighth such revision of its kind.

The NIPA statistics measure economic activity in terms of current (nominal) dollars and in constant (real) dollars. Constant-dollar series reflect data before a correction for price changes, while constant-dollar series are adjusted to reflect the effect of price changes over time.

In the BEA’s 1985 revision, all current-dollar series and NIPA statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The BEA’s 1985 revision, all current-dollar series and NIPA statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The BEA’s 1985 revision, all current-dollar series and NIPA statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.

Two types of major changes are evident in the recent revision: definitional and classification changes and statistical changes. Although changes in definition and classification are important, the statistical changes have a much greater impact on the NIPA statistics, both in terms of percent changes and conceptual revisions. This Economic Commentary analyzes the major statistical changes in the December 1985 benchmark revisions of the NIPA.

The Revised National Income and Product Accounts (NIPA) statistics were revised back to 1972, while many were revised for earlier periods as well. All constant-dollar series and price indexes were revised back to 1929 to reflect a base period from 1972 to 1982.
The current benchmark revision of the NIPA statistics offers some interesting information. For example, the percentage of personal consumption expenditures that are spent on food per capita tends to show a downward trend over time. The BEA, with the advice and assistance of IBM Corporation, developed a new price index that more accurately reflects the prices of computing equipment. The previous index assumed computer prices did not change between 1972 and 1982. This index shows that computer prices have declined by an average annual rate of 14 percent from 1972-84. The incorporation of the new computer price index reduces the annual average growth rate of constant-dollar computer purchases, a component of producers' durable equipment (PDE), by almost 15 percent points.

### Table 1 Revisions in Average Annual Rates of Change Over the Period 1972-84 for GNP and its Major Components (Percent)

<table>
<thead>
<tr>
<th>Component</th>
<th>Constant-dollar growth rates 1972-84</th>
<th>Base period shift</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP</td>
<td>0.2</td>
<td>0.0</td>
<td>-0.4</td>
</tr>
<tr>
<td>Personal consumption expenditures</td>
<td>-0.1</td>
<td>0.1</td>
<td>-0.4</td>
</tr>
<tr>
<td>Durable goods</td>
<td>-0.1</td>
<td>-0.3</td>
<td>-0.4</td>
</tr>
<tr>
<td>Non-durable goods</td>
<td>0.5</td>
<td>0.1</td>
<td>-0.5</td>
</tr>
<tr>
<td>Services</td>
<td>0.4</td>
<td>0.0</td>
<td>-0.3</td>
</tr>
<tr>
<td>Gross private domestic investment</td>
<td>-0.4</td>
<td>0.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Fixed investment</td>
<td>0.6</td>
<td>0.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Nonresidential</td>
<td>0.8</td>
<td>0.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Structures</td>
<td>0.5</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Producers' durable equipment</td>
<td>-1.2</td>
<td>0.0</td>
<td>-1.6</td>
</tr>
<tr>
<td>Residential</td>
<td>0.6</td>
<td>0.7</td>
<td>-0.1</td>
</tr>
<tr>
<td>Change in business inventories</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net exports of goods and services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>0.1</td>
<td>0.0</td>
<td>-0.2</td>
</tr>
<tr>
<td>Imports</td>
<td>-1.1</td>
<td>0.2</td>
<td>-1.2</td>
</tr>
<tr>
<td>Government purchases of goods and services</td>
<td>0.0</td>
<td>0.0</td>
<td>-0.1</td>
</tr>
</tbody>
</table>
| Average annual rates of change over the period 1972-84 for GNP and its major components (Percent).

### Figure 2 GNP Fixed-weight Price Index

The current benchmark revision of the NIPA statistics offers some interesting information. For example, the percentage of personal consumption expenditures that are spent on food per capita tends to show a downward trend over time. The BEA, with the advice and assistance of IBM Corporation, developed a new price index that more accurately reflects the prices of computing equipment. The previous index assumed computer prices did not change between 1972 and 1982. This index shows that computer prices have declined by an average annual rate of 14 percent from 1972-84. The incorporation of the new computer price index reduces the annual average growth rate of constant-dollar computer purchases, a component of producers' durable equipment (PDE), by almost 15 percent points. This increase translates into a substantial rise in PDE expenditures in 1972 dollars.

### Other Statistical Changes

The current benchmark revisions include a number of changes, including source-data changes and changes in methodology. These changes improve the reliability of the data, which is important for understanding the economic changes that have occurred in the 1980s. For example, the revision of computer purchases pushed the annual growth rate of real PDE up 4.8 percent, according to the new benchmark. This upward revision due to the new computer price index, rebasing to 1985 dollars, is evident in table 1, becoming the dominant influence in lowering real PDE growth.

Further effects of these statistical changes are carried over into the revision of data on exports. The upward revision to exports more than offsets the negative impact of rebasing, primarily due to the incorporation of the computer price index. Thus, real exports have grown 5.3 percent yearly, which is 0.1 percentage point higher than in earlier years, as estimated by the BEA.

A second major statistical change became necessary due to the large growth in the net export sector. From 1983 second quarter to 1985 third quarter, real exports rose an astounding 32.4 percent, causing frustration in the processing of import data. The U.S. Customs Service reports merchandise trade to the Census Bureau within 15 days of each month’s end. The enormous increase in imports has created a substantial additional volume of variability that “carry-over” data—that is, data received too late for inclusion into the proper month. This “carry-over” effect results in a serious timing problem and diminishes the reliability of the related changes in export data. Revised data for August 1985, for example, showed that “carry-over” deductions accounted for 0.3 percent of the value of imports and 1 percent of the value of exports. The BEA used the comprehensive revisions to adjust the period 1983 second quarter to 1985 second quarter for this “carry-over.” The major statistical change that occurred in calendar year 1985 was the dramatic revision of the quarterly data for the period 1983 fourth quarter and 1985 first quarter. For example, data that has been tremendously revised in the past originally reported to have risen $15.7 billion in the last quarter of 1984, then dramatically revised to fall $14.5 billion at the start of 1985.

Current revisions now reverse this pattern to indicate that net exports fell in 1984 fourth quarter and then rose in 1985 first quarter! This revision caused real GNP growth estimates to swing from the range of over 13 percent in 1984 fourth quarter and 0.3 percent in 1985 first quarter to 0.6 percent and 2.1 percent, respectively. Although the data does not alter the overall view of the net export sector, it does give us a better understanding of the trends in the data.

Finally, the third main statistical change in NIPA statistics attempted to improve the reliability of estimating the real growth in net exports. Federal tax return information is used for estimating several components of GNP. If consumers purchased more computers, for example, the resulting increase in computer purchases would result in a larger increase in real GDP growth than would have been the case had they purchased fewer computers. This is especially true for high-income households, which are more likely to purchase computers. The current benchmark revision of the NIPA statistics corrects for this bias by using more reliable estimates of computer purchases.