

## BEA BRIEFING

# Gross Domestic Product and Gross Domestic Income

## Revisions and Source Data

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THE NATIONAL income and product accounts (NIPAs) produced by the Bureau of Economic Analysis (BEA) provide a timely, comprehensive, and reliable picture of the U.S. economy. The featured measures—gross domestic product (GDP) and gross domestic income (GDI)—provide two ways to measure the value of U.S. output. GDP measures output as the value of goods and services sold to final users plus the change in private inventories, while GDI captures the value of the same output as the sum of income payments and other costs incurred in the production of those goods and services. In principle, GDP should equal GDI; however, they differ in practice because each is estimated using different, and largely independent, source data.

This article analyzes the source data used to prepare the GDP estimates and the GDI estimates according to a set of criteria that reflects the quality, the availability, and the use of the data. This analysis allows for a better understanding of the differences between the source data that underlie the GDP estimates and those that underlie the GDI estimates and illustrates how the incorporation of the increasingly detailed and comprehensive source data leads to revisions to the GDP estimates and to the GDI estimates.<sup>1</sup>

### The revision cycle

BEA produces quarterly and annual estimates of GDP and GDI in a series of vintages—current quarterly estimates, annual revision estimates, and comprehensive revision estimates. BEA revises its estimates in successive vintages in order to improve the accuracy of the estimates and to provide a more detailed picture of the

1. For an earlier analysis of the source data used to prepare the successive vintages of the GDP estimates, see Bruce T. Grimm and Teresa L. Weadock, “Gross Domestic Product: Revisions and Source Data,” *SURVEY OF CURRENT BUSINESS* 86 (February 2006):11–15. For an earlier analysis of the source data underlying the GDI estimates, see Alyssa E. Holdren and Bruce T. Grimm, “Gross Domestic Income: Revisions and Source Data,” *SURVEY* 88 (December 2008):14–20.

economy by incorporating the most complete and reliable source data available at a given time.<sup>2</sup> Revisions are not errors. Revisions are mainly driven by the incorporation of more complete and revised source data, and the release of the revised estimates is determined by the availability of these data. Source data may take the form of indicators that have been benchmarked to more comprehensive and detailed annual surveys, or in some cases, they may represent comprehensive source data that take the place of judgemental trends or indicators used to prepare the previously published estimates. Table 1 shows the release dates for the full set of estimates for the third quarter of 2009.

Current quarterly estimates provide an “early read” of economic activity and are produced using a variety of source data, including preliminary survey results, various indicators, and trade source data. Annual revision estimates incorporate newly available and revised source data that are more complete, more detailed, and more reliable than those incorporated for the current quarterly estimates, such as data from mandatory annual surveys and from administrative records. Annual revision estimates may also reflect the introduction of methodological improvements. Comprehensive revision

2. The successive revisions do not substantially change the general picture of economic activity. For more information, see Dennis J. Fixler, Ryan Greenaway-McGrevy, and Bruce T. Grimm, “Revisions to GDP, GDI, and Their Major Components,” *SURVEY* 91 (July 2011): 9–31.

**Table 1. Release Schedule for the Estimates of Gross Domestic Product (GDP) and Gross Domestic Income (GDI), Third Quarter of 2009**

Estimate	GDP	GDI
Advance estimate .....	October 2009	n.a.
Second estimate .....	November 2009	November 2009
Third estimate .....	December 2009	December 2009
Revised previous quarter estimate .....	n.a.	February 2010
First annual revision estimate .....	July 2010	July 2010
Second annual revision estimate .....	July 2011	July 2011
Third annual revision estimate .....	July 2012	July 2012
Comprehensive revision estimate .....	July 2013	July 2013

n.a. Not applicable

sion estimates often reflect the introduction of conceptual and major methodological changes and benchmarking to the BEA benchmark input-output accounts in addition to the incorporation of newly available and revised source data, such as data from Census Bureau quinquennial economic censuses.

### Current quarterly estimates

The current quarterly estimates of GDP are published in a series of releases—advance, second, and third—approximately 30, 60, and 90 days, respectively, after the end of the reference quarter. Each current quarterly estimate for a quarter incorporates increasingly comprehensive and improved source data. Unlike GDP, an advance current quarterly estimate of GDI is not released.<sup>3</sup>

At the time that the second estimates of GDP for the most recent quarter are released, BEA releases revised estimates for the previous quarter for two components of GDI—private wages and salaries and employer contributions for government social insurance. These revised estimates incorporate the most recently available wage and salary data from the Bureau of Labor Statistics (BLS) quarterly census of employment and wages (QCEW).<sup>4</sup>

### Annual revision estimates

BEA releases at least three annual revision estimates of GDP, GDI, and their components. Generally, annual revisions provide updated quarterly and annual estimates for the most recent calendar year and for at least the preceding 2 years.<sup>5</sup> The first annual revision estimates for a given year are usually released in July of the following year. The second and

3. At the time of the advance estimates, data on domestic profits and on net interest of domestic industries are not available. For fourth quarters, these data are not available for the advance estimates or for the second estimates.

4. The QCEW data are more comprehensive than the monthly data on employment, hours, and earnings from the BLS current employment statistics survey that are used to derive the earlier estimates. The QCEW data include the pay of supervisors and irregular pay, such as bonuses and gains from the exercise of stock options. Revised estimates, which reflect the incorporation of QCEW data, were first published for the first quarter of 2002. Other NIPA series that are revised because of the incorporation of the data from the QCEW include GDI, the statistical discrepancy, gross national income, national income, personal income, disposable personal income, personal saving, gross (national) saving, compensation of employees, personal current taxes, and gross value added of corporate business.

5. Before the release of the first annual revision estimates, BEA releases early annual estimates of GDP and GDI. Early annual estimates of GDP are initially released with the advance estimates for the fourth quarter, usually in January of the following year, and the estimates are then revised for the second and third estimates for the fourth quarter. Early annual estimates of GDI are initially released with the third estimates for the fourth quarter, usually in March of the following year. In addition, early annual estimates of GDI are revised to reflect the incorporation of fourth-quarter QCEW data, usually in May of the following year.

third annual revision estimates follow in successive years. For example, the first annual revision estimates for 2009 were released in July 2010. The estimates released in July 2010 also included second annual revision estimates for 2008 and third annual revision estimates for 2007. Beginning with the 2010 annual revision, BEA adopted a flexible annual revision policy that allows for the incorporation of methodological changes to the accounts on a more timely basis and for a longer time span than the typical 3 years, rather than delaying the incorporation of these changes until the next comprehensive revision.<sup>6</sup>

### Comprehensive revision estimates

Comprehensive revisions are conducted about every 5 years, following the release of data from the Census Bureau quinquennial economic censuses. They encompass a wider range of improvements than most annual revisions—including major changes in definitions, in classifications, and in presentations—and may result in revisions that extend as far back as 1929, the first year for which annual estimates are published. The most important source of information for comprehensive NIPA revisions is the BEA benchmark input-output accounts, which, in turn, reflect the incorporation of data from the economic censuses. The input-output accounts are used to establish the level of GDP for the census year and provide critical information for estimating GDP for periods after the census year. For most components of GDI, no such benchmarking process exists.

## Source Data Categories

This section categorizes the source data that are used to prepare the GDP and GDI estimates according to quality, availability, and use into five categories: comprehensive data, adjusted comprehensive data, direct indicator data, indirect indicator data, and trend-based data.

### Comprehensive data

These data provide comprehensive or nearly comprehensive coverage of the relevant population. They are either consistent with national accounts concepts, coverage, and timing or can be made to be consistent with only minor adjustments. For example, 3 months of Census Bureau data on trade in goods are incorporated into the estimates of exports and imports of goods, beginning with the second current quarterly estimates. The Census Bureau data provide nearly comprehensive coverage of the movement of goods into and out of the United States, and only minor adjustments for coverage and valuation are necessary to make the data conform to national accounts concepts.

6. For more information, see “Taking Account,” SURVEY 87 (July 2007): iv.

### Adjusted comprehensive data

These data provide comprehensive or nearly comprehensive coverage of the relevant population; however, these data require substantial adjustments in order to conform to national accounts concepts. These data include survey data as well as tax or regulatory data that are adjusted to correct for misreporting, differences in coverage, and differences in accounting concepts. For example, data from Internal Revenue Service (IRS) tabulations of corporate tax returns are incorporated into the second and third annual revision estimates of corporate profits. These annual data are more comprehensive than the indicators used to extrapolate the earlier estimates; however, they must be substantially adjusted, so that they conform to national accounts concepts.<sup>7</sup>

### Direct indicator data

These data are used to indicate the movements of a series rather than the levels of a series (see the box “Extrapolation and Interpolation With Source Data Indicators”). These data are closely related to the comprehensive data that are ultimately incorporated into

7. For more information on the adjustments to the IRS corporate tax return data, see *Concepts and Methods of the U.S. National Income and Product Accounts, Chapter 13: Corporate Profits* (February 2014): 13–22—13–38.

the estimates; however, they are less detailed or do not provide comprehensive coverage of the relevant population. For example, quarterly services survey (QSS) data from the Census Bureau are incorporated into the third current quarterly estimates of consumer spending for health care services. However, these data are less comprehensive than the Census Bureau service annual survey (SAS) data that are used to prepare the annual revision estimates.

### Indirect indicator data

Indirectly related data are used to prepare indicator series when more suitable data are not available. These data include volume or activity indicators and other NIPA estimates. For example, the advance current quarterly estimates of business investment in research and development are extrapolated using BLS data on employment, hours, and earnings.

### Trend-based data

Trends are used when no data are available. Trends are typically based on previous estimates, using moving averages, regressions, growth factors, or judgment. For example, for the advance and second current quarterly estimates of private fixed investment in software, no suitable source data are available, and the estimates are

### Extrapolation and Interpolation With Source Data Indicators

Generally, monthly or quarterly source data that are used to prepare the current quarterly estimates are not as comprehensive as the annual source data that are used to prepare the annual revision estimates. Thus, some estimates are prepared through extrapolation or interpolation, using the more frequent but less comprehensive data as indicators of the movements of the series rather than as measures of the levels of the series.<sup>1</sup>

Specifically, for periods not yet covered by annual estimates (such as the current quarter), the quarterly estimates are extrapolated from the latest annual estimate that is based on comprehensive annual source data, using the pattern of the less detailed quarterly source data. Similarly, for periods for which the annual estimates are based on comprehensive annual source data, the quarterly estimates are interpolated between these annual

estimates; that is, the quarterly estimates are controlled to these annual estimates while preserving the movements in the quarterly source data.

For example, the annual tax return data used to prepare the estimates of corporate profits are only available for a given year, beginning with the second annual revision estimates for that year. Therefore, prior to the second annual revision, changes in the annual and quarterly estimates are extrapolated using a variety of industry-specific indicators, based on Census Bureau tabulations of quarterly financial reports, on regulatory agency reports, and on publicly available corporate financial statements. Beginning with the second annual revision estimates, the annual levels of corporate profits are based on the tax return data. The interpolation process ensures that the pattern of change in the quarterly estimates follows the movements in the quarterly indicators that were used to extrapolate the earlier estimates.

For components where more frequent source data are not available, indicators may be based on trends.

1. For more information on the use of interpolation and extrapolation to prepare NIPA estimates, see *Concepts and Methods of the U.S. National Income and Product Accounts, Introductory Chapters 1–4* (February 2014): 4–6—4–7.

therefore based on moving averages of Census Bureau QSS data for prior quarters.

The incorporation of different categories of source data as estimates progress through the revision cycle is shown in tables 3 and 4.

### Source Data for Successive Vintages

Table 2 and charts 1 and 2 present the shares of the five categories of source data that are incorporated in the successive vintages of the GDP and GDI estimates. This section summarizes the primary reasons for the changes in these shares as the estimates are revised with each vintage in order to incorporate more complete and more reliable source data.

### GDP estimates

#### Current quarterly estimates

The current quarterly estimates of GDP incorporate data from each of the five categories. For the advance current quarterly estimates, about one-third of the estimates incorporate indirect indicator data, about one-quarter of the estimates incorporate direct indicator data, about one-quarter incorporate comprehensive data, about 10 percent of the estimates incorporate direct indicator data, and less than 1 percent incorporate adjusted comprehensive data (table 2 and chart 1).

The major difference between the advance current quarterly estimates and the second current quarterly estimates is that comprehensive data replace BEA assumptions (trend-based data) for the third month of the quarter for several key components, including private and state and local government investment in

structures and exports and imports of goods.<sup>8</sup> In addition, Census Bureau monthly retail sales data (comprehensive data) replace advance monthly retail sales data (direct indicator data) for the third month of the quarter for the estimates of consumer spending for goods and for food services.

Between the second current quarterly estimates and the third current quarterly estimates, the biggest change is the incorporation of Census Bureau QSS data (direct indicator data) into the estimates of consumer spending for services and of private and government investment in software that replace estimates extrapolated either with BLS data on employment, hours, and earnings (indirect indicator data) or with judgmental trends (trend-based data).

#### Annual revision estimates

For the first annual revision estimates, the shares of the estimates based on comprehensive data and adjusted comprehensive data both increase, while the share of

8. For many of the key series used to prepare the advance current quarterly estimates of GDP—including retail sales, unit automobile and truck sales and inventories, manufacturers' shipments of nondefense capital goods, manufacturers' inventories of durable goods, and federal defense spending—source data are available for all months of the quarter. For the following series, source data for the third month of the quarter usually are not available in time for inclusion in the advance current quarterly estimates, and BEA makes assumptions for these source data: new nonresidential, new single-family, and new multifamily construction spending; change in private inventories for nondurable-goods manufacturing and for merchant wholesale and retail industries other than motor vehicles and equipment; U.S. exports and imports of goods based on the international transactions accounts; and state and local government construction spending. These assumptions are published in the technical note that accompanies each monthly GDP release.

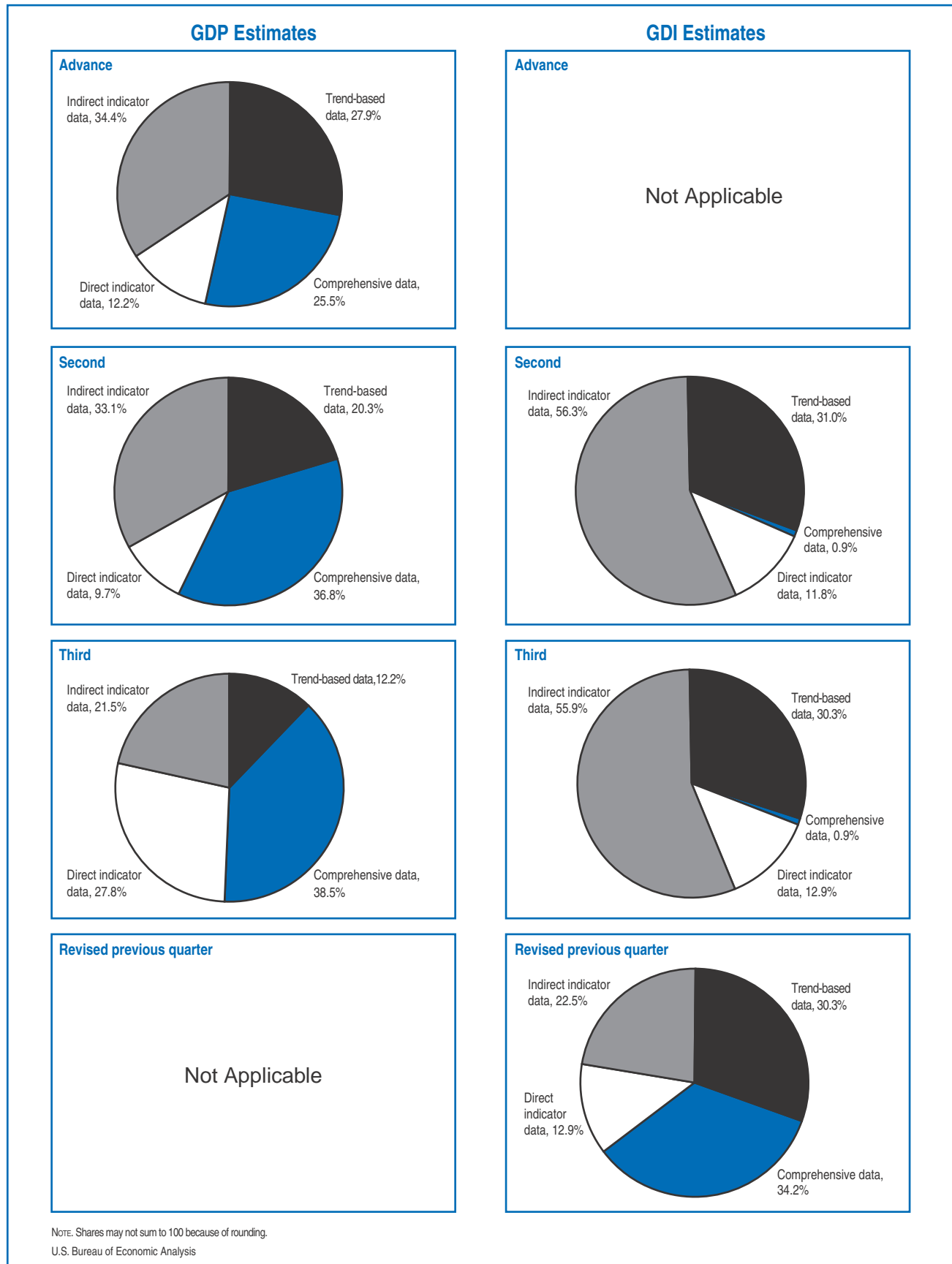
Table 2. Shares of Source Data for the Successive Estimates of Gross Domestic Product and Gross Domestic Income

[Percent]

	Advance	Second	Third	Revised previous quarter	First annual	Second annual	Third annual	Comprehensive revision
<b>Gross domestic product</b>								
Comprehensive data .....	25.5	36.8	38.5	.....	73.5	84.3	87.6	96.7
Adjusted comprehensive data .....	0.0	0.0	0.0	.....	0.5	0.9	0.9	0.9
Direct indicator data .....	12.2	9.7	27.8	.....	15.3	9.0	9.0	0.0
Indirect indicator data .....	34.4	33.1	21.5	.....	4.0	2.7	2.5	2.3
Trend-based data .....	27.9	20.3	12.2	.....	6.7	3.0	0.0	0.0
<b>Gross domestic income</b>								
Comprehensive data .....	.....	0.9	0.9	34.2	53.0	58.3	64.8	68.0
Adjusted comprehensive data .....	.....	.....	.....	.....	.....	31.6	31.6	31.6
Direct indicator data .....	.....	11.8	12.9	12.9	15.2	7.8	3.2	.....
Indirect indicator data .....	.....	56.3	55.9	22.5	13.4	0.5	0.3	0.3
Trend-based data .....	.....	31.0	30.3	30.3	18.3	1.8	.....	.....

NOTE. Shares may not sum to 100 because of rounding.

**Chart 1. Shares of Source Data for the Current Quarterly GDP and GDI Estimates**



the estimates based on each of the other three categories of source data decreases (table 2 and chart 2). These changes primarily reflect the following:

- SAS data (comprehensive data) replace QSS data (direct indicator data) and other indicators for the estimates of consumer spending for services and of private and government investment in software.
- BEA annual survey data (comprehensive data) replace indicators for the estimates of exports and imports of services.
- BLS QCEW data (comprehensive data) replace BLS employment, hours, and earnings data (indirect indicator data) for the estimates of general government wages and salaries.

For the second annual revision estimates, the continued increases in the shares of the estimates based on comprehensive data and adjusted comprehensive data primarily reflect the following:

- Census Bureau annual survey of manufactures data (comprehensive data) replace Census Bureau monthly survey of manufacturers' shipments, inventories, and orders data (direct indicator data) for the estimates of private fixed investment in equipment.
- National Science Foundation survey data (comprehensive data) replace company financial report data (direct indicator data) for the estimates of private fixed investment in research and development.
- Fiscal year census of governments/government finances (COG/GF) data (comprehensive data) replace judgmental trends for the first half of the year for estimates of state and local government spending.<sup>9</sup>

For the third annual revision estimates, the major difference is that COG/GF data (comprehensive data) replace judgmental trends for the second half of the year for the estimates of state and local government spending.

### Comprehensive revision estimates

For the comprehensive revision estimates, the major difference is that decennial census of housing data on housing stocks and average rents (comprehensive data) replace annual survey data on housing stocks and BLS consumer price index data on rents (direct indicator

data) for the estimates of rental of tenant-occupied nonfarm housing and of imputed rental of owner-occupied nonfarm housing.

## GDI estimates

### Current quarterly estimates

The current quarterly estimates of GDI incorporate data from four of the five categories of source data; adjusted comprehensive data are not incorporated into any of the estimates until the second annual revision. For the second and third current quarterly estimates, just over half of the estimates incorporate indirect indicator data, about a third of the estimates incorporate trend-based data, a little over 10 percent incorporate direct indicator data, and less than 1 percent incorporate comprehensive data (table 2 and chart 1).

When the BLS QCEW data are incorporated into the revised estimates of private wages and salaries for the previous quarter (released with the second current quarterly estimates of GDP), the share of the GDI estimates that incorporates comprehensive data increases from less than 1 percent to about 35 percent.

### Annual revision estimates

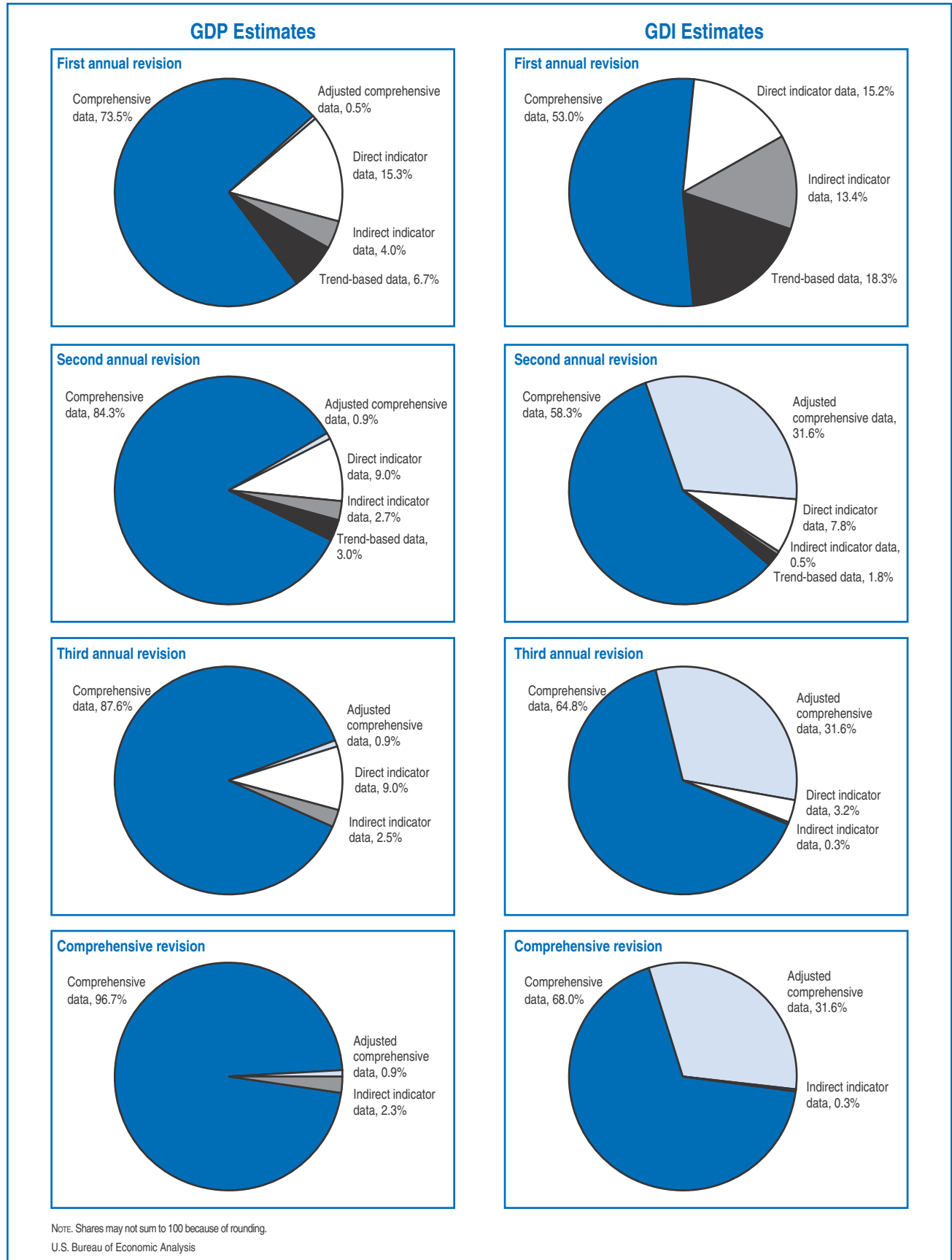
For the first annual revision estimates, the shares of the estimates based on comprehensive data and on direct indicator data increase, while the shares based on the other categories decrease (table 2 and chart 2). These changes primarily reflect the following:

- BLS QCEW data (comprehensive data) replace BLS employment, hours, and earnings data (indirect indicator data) for the estimates of government wages and salaries.
- Federal agency data (comprehensive data) replace indicators and trends for the estimates of supplements to wages and salaries.
- Annual survey data on housing stocks (direct indicator data) replace housing stocks extrapolated with Census Bureau data on housing starts (indirect indicator) for the estimates of rental of tenant-occupied nonfarm housing and of imputed rental of owner-occupied nonfarm housing within rental income of persons.

For the second annual revision estimates, the major change is the incorporation of IRS tax return data (adjusted comprehensive data) into the estimates of corporate profits, nonfarm proprietors' income, net domestic monetary interest, and capital consumption allowance; these data replace indicators and trends used for the earlier estimates. In addition, COG/GF

9. Because the fiscal years for many state and local governments do not coincide with calendar years, the incorporation of fiscal year data may affect the estimates for more than 1 calendar year. For more information, see *Concepts and Methods of the U.S. National Income and Product Accounts, Chapter 9: Government Consumption Expenditures and Gross Investment* (February 2014): 9–12.

**Chart 2. Shares of Source Data for the Annual Revision and Comprehensive Revision GDP and GDI Estimates**



data (comprehensive data) replace judgmental trends for the first half of the year for the estimates of several categories of state and local government receipts, including local government taxes on production and imports, rents and royalties, and the current surplus of government enterprises.

For the third annual revision estimates, the share of the estimates covered by comprehensive data increases, while the shares covered by direct indicator data, by indirect indicator data, and by trend-based data decrease. These changes primarily reflect the following:

- Pension benefit guaranty corporation (PBGC) plan-level tabulations of IRS form 5500 data (comprehensive data) replace PBGC aggregate data (direct indicator) for the estimates of employer contributions and of imputed interest on plans' claims on employers for private pension plans.
- Data from a complete sample of state and local government systems' financial and actuarial reports

(comprehensive data) replace data from an incomplete sample of reports (direct indicator data) for the estimates of employer contributions and of imputed interest on plans' claims on employers for state and local government pension plans.

- COG/GF data (comprehensive data) replace judgmental trends for the second half of the year for the estimates of state and local government receipts.

#### **Comprehensive revision estimates**

For the comprehensive revision estimates, the one difference is that decennial census of housing data on housing stocks and average rents (comprehensive data) replace annual survey data on housing stocks and BLS consumer price index data on rents (direct indicator data) for the estimates of rental of tenant-occupied nonfarm housing and of imputed rental of owner-occupied nonfarm housing within rental income of persons.

*Tables 3 and 4 follow.*



**Table 3. Major Source Data Incorporated for the Current Quarterly Estimates of  
Gross Domestic Product and Gross Domestic Income by Category of Source Data—Continues**

Gross domestic product	Gross domestic income
<b>Comprehensive data</b>	
<p><b>Personal consumption expenditures (PCE) for goods and for food services</b>—Census Bureau monthly retail trade survey (MRTS) data (2 months for the advance estimates and 3 months for the second and third estimates).</p> <p><b>PCE for new motor vehicles and private fixed investment in new autos and new light trucks</b>—<i>Ward's Automotive Reports</i> data on unit sales, J.D. Power and Associates data on registrations (2 months for advance estimates and 3 months for second and third estimates), and R.L. Polk data on average prices.</p> <p><b>PCE for prescription drugs</b>—Intercontinental Medical Statistics Health, Inc. data on prescription drug sales to consumers.</p> <p><b>PCE for tobacco</b>—Department of the Treasury data on tobacco consumption (1 month for advance estimates, 2 months for second estimates, and 3 months for third estimates) and BLS consumer price index (CPI) data for tobacco and smoking products.</p> <p><b>PCE for net foreign travel</b>—quarterly international transactions accounts data (second and third estimates).</p> <p><b>Implicit services of commercial banks</b>—FRB <i>Call Report</i> data (second and third estimates).</p> <p><b>Private fixed investment and state and local government gross investment in structures</b>—Census Bureau monthly construction spending data.<sup>1</sup></p> <p><b>Exports of goods and imports of goods</b>—trade in goods and services data.<sup>1</sup></p> <p><b>Exports of services and imports of services</b>—quarterly international transactions accounts data (second and third estimates).</p> <p><b>Federal government spending</b>—<i>Monthly Treasury Statement</i> data and Department of Defense financial reports on disbursements (third estimates).</p>	<p><b>Private wages and salaries</b>—Bureau of Labor Statistics (BLS) quarterly census employment and wages (QCEW) data (revised previous quarter estimates).</p> <p><b>Imputed interest paid and received by commercial banks</b>—Federal Reserve Board (FRB) <i>Call Report</i> data (second and third estimates).</p>
<b>Adjusted comprehensive data</b>	
<b>Change in private inventories for retail industries other than motor vehicles</b> —MRTS data. <sup>1</sup>	Not applicable
<b>Direct indicator data</b>	
<p><b>PCE for goods and for food services</b>—advance MRTS data (1 month for advance estimates).</p> <p><b>PCE for nondiesel gasoline</b>—monthly Energy Information Administration (EIA) data on quantities of gasoline supplied (1 month for advance estimates, 2 months for second estimates, and 3 months for third estimates) and BLS data on average prices.</p> <p><b>PCE for services and private fixed investment in software</b>—Census Bureau quarterly services survey (QSS) data (third estimates).</p> <p><b>PCE for electricity and gas services</b>—monthly EIA usage and unit value data (1 month for advance estimates, 2 months for second estimates, and 3 months for third estimates).</p> <p><b>Private fixed investment in petroleum and natural gas structures</b>—American Petroleum Institute data on footage drilled and Baker Hughes data on rotary rig counts.</p> <p><b>Private fixed investment in equipment</b>—Census Bureau advance monthly survey of manufacturers' shipments, inventories, and orders (MSM) data (1 month for advance estimates) and MSM data (2 months for advance estimates and 3 months for second and third estimates).</p> <p><b>Private fixed investment in research and development</b>—company financial report data (second and third estimates).</p> <p><b>Change in private inventories for durable-goods manufacturing industries</b>—advance MSM data (1 month for advance estimates) and MSM data (2 months for advance estimates and 3 months for second and third estimates).</p> <p><b>Change in private inventories for nondurable-goods manufacturing industries</b>—MSM data.<sup>1</sup></p> <p><b>Change in private inventories for merchant wholesale trade industries</b>—Census Bureau monthly wholesale trade survey data.<sup>1</sup></p>	<p><b>State government general sales taxes</b>—a sample of state monthly tax collections data (advance and second estimates).</p> <p><b>State and local government taxes on production and imports</b>—preliminary data from the Census Bureau quarterly tax survey (third estimates).</p> <p><b>Corporate profits</b>—Compustat data and Census Bureau <i>Quarterly Financial Report</i> data (second and third estimates).</p>

**Table 3. Major Source Data Incorporated for the Current Quarterly Estimates of Gross Domestic Product and Gross Domestic Income by Category of Source Data—Table Ends**

Gross domestic product	Gross domestic income
<b>Indirect indicator data</b>	
<p><b>PCE for nondiesel gasoline and for electricity and natural gas services</b>—EIA <i>Short-Term Energy Outlook</i> data (2 months for advance estimate and 1 month for second estimates).</p> <p><b>PCE for services</b>—CES data (primarily advance and second estimates).</p> <p><b>Rental of tenant-occupied nonfarm housing and for imputed rental of owner-occupied nonfarm housing</b>—Census Bureau housing starts data and CPI data on average rent.</p> <p><b>PCE for cellular telephone services</b>—cellular telephone company revenue data (second estimates).</p> <p><b>Private fixed investment in residential improvements</b>—advance MRTS data (1 month for advance estimates), MRTS data (2 months for advance estimates and 3 months for second and third estimates), and BLS occupational earnings data (2 months for advance estimates and 3 months for second and third estimates).</p> <p><b>Private fixed investment in own-account software and in research and development</b>—CES data (advance estimates).</p> <p><b>Private fixed investment in entertainment, literary, and artistic originals</b>—CES data (advance and second estimates) and QSS data (third estimates).</p> <p><b>General government wages and salaries</b>—CES data.</p> <p><b>General government employer contributions for government social insurance</b>—NIPA estimates of wages and salaries.</p> <p><b>Government consumption of fixed capital</b>—NIPA estimates of gross investment and of prices.</p>	<p><b>Private wages and salaries and government wages and salaries</b>—BLS current employment statistics (CES) data.</p> <p><b>Employer contributions for government social insurance</b>—estimates of wages and salaries from the national income and product accounts (NIPAs).</p> <p><b>State gasoline sales taxes</b>—EIA gasoline supplied data (advance and second estimates).</p> <p><b>Local general sales taxes</b>—NIPA estimates of state general sales taxes.</p> <p><b>Monetary interest, net</b>—NIPA estimates of personal interest income, net interest paid by government, and personal interest payments.</p> <p><b>Nonfarm proprietors' income</b>—various activity indicators and NIPA estimates of wages and salaries.</p> <p><b>Farm proprietors' income</b>—U.S. Department of Agriculture data.</p> <p><b>Rental of tenant-occupied nonfarm housing and for imputed rental of owner-occupied nonfarm housing within rental income of persons</b>—Census Bureau housing starts data and CPI data on average rent.</p>
<b>Trend-based data</b>	
<p><b>PCE for tobacco</b> (2 months for advance estimates and 1 month for second estimates).</p> <p><b>PCE for services</b> (primarily advance and second estimates).</p> <p><b>Implicit services of commercial banks</b> (advance estimates).</p> <p><b>Private fixed investment and state and local government gross investment in structures.</b><sup>1</sup></p> <p><b>Private fixed investment in software</b> (advance and second estimates).</p> <p><b>Change in private inventories for nondurable-goods manufacturing industries, for merchant wholesale industries, and for retail industries other than motor vehicles.</b><sup>1</sup></p> <p><b>Exports of goods and of imports of goods.</b><sup>1</sup></p> <p><b>State and local government spending other than for wages and salaries, employer contributions for government social insurance, and consumption of fixed capital.</b></p>	<p><b>Employer contributions for employee pension and insurance funds.</b></p> <p><b>Federal taxes on production and imports.</b></p> <p><b>State and local government taxes on production and imports.</b></p> <p><b>Government subsidies.</b></p> <p><b>Imputed interest paid and received by commercial banks</b> (advance estimates).</p> <p><b>Business current transfer payments (net).</b></p> <p><b>Current surplus of government enterprises.</b></p>

1. For several of the key series used to prepare the advance current quarterly estimates of GDP, source data are only available for the first 2 months of the quarter, and assumptions are made for the third month.

NOTE. In this table, "advance," "second," and "third" refer to the advance, second, and third current quarterly estimates, respectively. The references to the current quarterly estimates in parentheses indi-

cate for which of the estimates the data are incorporated. Where no reference is included in parentheses, the data are incorporated for each of the current quarterly estimates. In addition, for estimates for which data are not available for all 3 months of the quarter, information may be included in parentheses to identify the sequence in which the data become available.

**Table 4. Major Source Data Incorporated for the Annual Revision Estimates of Gross Domestic Product and Gross Domestic Income by Category of Source Data**

Gross domestic product	Gross domestic income
<b>Comprehensive data<sup>1</sup></b>	
<p><b>Personal consumption expenditures (PCE) for goods and for food services</b>—Census Bureau monthly retail trade survey (MRTS) data (first estimates) and annual retail trade survey (ARTS) data (second and third estimates).</p> <p><b>PCE for services</b>—Census Bureau service annual survey (SAS) data.</p> <p><b>PCE for electricity and natural gas services</b>—annual Energy Information Administration (EIA) data.</p> <p><b>PCE for insurance services</b>—A.M. Best data (second and third estimates).</p> <p><b>Private fixed investment and state and local government gross investment in structures</b>—Census Bureau annual construction spending data.</p> <p><b>Private fixed investment in equipment</b>—Census Bureau annual survey of manufactures (ASM) data (second and third estimates).</p> <p><b>Private fixed investment in research and development</b>—National Science Foundation survey data (second and third estimates).</p> <p><b>Private fixed investment in software</b>—Census Bureau SAS data.</p> <p><b>Exports of services and imports of services</b>—annual data from BEA surveys.</p> <p><b>General government wages and salaries</b>—BLS QCEW data.</p> <p><b>Federal government spending</b>—Department of Defense contract awards data, Federal Procurement Data System data, U.S. <i>Budget</i> data, and “budget exhibit” data.</p> <p><b>State and local government spending</b>—Census Bureau COG/GF data (second and third estimates).<sup>2</sup></p>	<p><b>State and local government wages and salaries</b>—Bureau of Labor Statistics (BLS) quarterly census employment and wages (QCEW) data.</p> <p><b>Employee contributions for government social insurance, federal government defined benefit and defined contribution pension plan contributions, and federal government taxes on production and imports</b>—federal agency data.</p> <p><b>Employer contributions to private pension plans and imputed interest on plans’ claims on employers for private pension plans</b>—plan-level tabulations of Internal Revenue Service (IRS) form 5500 data from the Pension Benefit Guaranty Corporation (PBGC) (third estimates).</p> <p><b>Employer contributions to state and local government pension plans and imputed interest on plans’ claims on employers for state and local government pension plans</b>—complete sample of state and local governments’ financial and actuarial report data (third estimates).</p> <p><b>Employer contributions for group health insurance</b>—medical expenditure panel survey data (second and third estimates).</p> <p><b>State and local government taxes on production and imports, subsidies, and current surplus of government enterprises</b>—Census Bureau census of governments/ government finances (COG/GF) data (second and third estimates).<sup>2</sup></p> <p><b>State government taxes on production and imports</b>—Census Bureau COG/GF data (second and third estimates) and state government tax collections data.<sup>3</sup></p> <p><b>Imputed interest paid by depository institutions other than commercial banks</b>—Federal Deposit Insurance Corporation and Credit Union National Association data.</p> <p><b>Imputed interest paid by life insurance carriers</b>—American Council of Life Insurers data (second and third estimates).</p> <p><b>Imputed interest paid by property and casualty insurance companies and net insurance settlements</b>—A.M. Best data (second and third estimates).</p> <p><b>Farm proprietors’ income</b>—U.S. Department of Agriculture data.</p> <p><b>Federal government subsidies and current surplus of federal enterprises</b>—U.S. <i>Budget</i> data.</p>
<b>Adjusted comprehensive data</b>	
<p><b>Change in private inventories for all industries except farm</b>—Census Bureau annual wholesale trade survey data, ARTS data, and ASM data and IRS <i>Statistics of Income (SOI)</i> data (second and third estimates).</p> <p><b>Private fixed investment in own-account software</b>—BLS occupational employment statistics survey data on production costs (second and third estimates).</p>	<p><b>Monetary interest, net, nonfarm proprietors’ income, corporate profits, and capital consumption allowance</b>—IRS <i>SOI</i> data (second and third estimates).</p>
<b>Direct indicator data</b>	
<p><b>PCE for nondiesel gasoline</b>—monthly EIA data on quantities of gasoline supplied and BLS data on average prices.</p> <p><b>Rental of tenant-occupied nonfarm housing and imputed rental of owner-occupied nonfarm housing</b>—Census Bureau American housing survey (AHS) data or current population survey (CPS) data on housing stocks and BLS consumer price index (CPI) data on average rent.</p> <p><b>PCE for insurance services</b>—A.M. Best Review/Preview data (first estimates).</p> <p><b>Private fixed investment in equipment</b>—Census Bureau monthly survey of manufacturers’ shipments, inventories, and orders (MSM) data.</p> <p><b>Change in private inventories for nondurable-goods manufacturing industries</b>—MSM data (first estimates).</p> <p><b>Change in private inventories for merchant wholesale trade industries</b>—Census Bureau monthly wholesale trade survey data (first estimates).</p>	<p><b>Employer contributions to private pension plans and imputed interest on plans’ claims on employers for private pension plans</b>—PBGC aggregate tabulations of IRS form 5500 data (second estimates).</p> <p><b>Employer contributions to state and local government pension plans and imputed interest on plans’ claims on employers for state and local government pension plans</b>—incomplete sample of state and local governments’ financial and actuarial report data (second estimates).</p> <p><b>State government taxes on production and imports</b>—Census Bureau quarterly tax survey data (first estimates).<sup>3</sup></p> <p><b>Rental of tenant-occupied nonfarm housing and imputed rental of owner-occupied nonfarm housing within rental income of persons</b>—Census Bureau AHS data or CPS data on housing stocks and BLS CPI data on average rent.</p> <p><b>Imputed interest paid by property and casualty insurance companies and net insurance settlements</b>—A.M. Best Review/Preview data (first estimates).</p> <p><b>Corporate profits</b>—Compustat data and Census Bureau <i>Quarterly Financial Report</i> data (first estimates).</p>
<b>Indirect indicator data</b>	
<p><b>Private fixed investment in entertainment, literary, and artistic originals</b>—Census Bureau SAS data.</p> <p><b>Government consumption of fixed capital</b>—NIPA estimates of government gross investment and prices.</p>	<p><b>Monetary interest, net</b>—NIPA estimates of personal interest income, net interest paid by government, and personal interest payments (first estimates).</p> <p><b>Nonfarm proprietors’ income</b>—various activity indicators and NIPA estimates of wages and salaries (first estimates).</p>
<b>Trend-based data</b>	
<p><b>State and local government spending other than for wages and salaries, employer contributions for government social insurance, and consumption of fixed capital</b> (first and second estimates).<sup>2</sup></p>	<p><b>State and local government taxes on production and imports, subsidies, and current surplus of government enterprises</b> (first and second estimates).<sup>2</sup></p>

1. Unless otherwise noted, the comprehensive data incorporated for the current quarterly estimates are also incorporated for the annual revision estimates. See table 3 for more information.

2. Fiscal year COG/GF data incorporated for the second annual revision estimates only cover about half of the calendar year; the remaining half of the calendar year is estimated with judgmental trends.

3. Fiscal year state government tax collections data incorporated for the first annual revision estimates only cover about half of the calendar year; the remaining half of the calendar year is estimated

with quarterly tax survey data.

NOTE: In this table “first,” “second,” and “third” refer to the first, second, and third annual revision estimates, respectively. The references to the annual revision estimates in parentheses indicate for which of the estimates the data are incorporated. Where no reference is included in parentheses, the data are incorporated for each of the annual revision estimates.