The Building Blocks of Gross Domestic Product

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John Sperry
Survey Statistician
U.S. Census Bureau
Economic Indicators Division

Marissa Crawford
Economist
Bureau of Economic Analysis
National Economic Accounts
John Sperry is a Survey Statistician with the International Trade Macro Analysis Branch. Since joining the Census Bureau in 2012, John has worked in wholesale and international trade indicator offices. He is currently working on multiple international trade projects, and enjoys teaching data users how to access trade data.

Marissa Crawford is an Economist at the Bureau of Economic Analysis. She has a Bachelor in Science degree in Economics from Oklahoma State University and an MBA from Georgetown University. Marissa works in the Coordination and Quality Assurance Branch in BEA’s National Economic Accounts directorate where she is part of the team that reviews and prepares the release of gross domestic product, personal income and outlays, and corporate profits.
Webinar Overview

- Introduction
- Review BEA & Its Data Products
- Define Gross Domestic Product (GDP)
- How is Production Measured?
- Evolution of GDP Estimates
- How does Census Data Fit?
- Live Question & Answer Session

SUBMIT QUESTIONS VIA CHAT TO ASK GDP
What is the Mission of the Bureau of Economic Analysis?

To promote a better understanding of the U.S. economy by providing the most timely, relevant, and accurate economic data in an objective and cost-effective manner.

For more information & data offerings visit: BEA.GOV
Balancing Three Principles of Mission

Accurate
• How close the estimates come to measuring the concepts they are designed to measure

Timely
• Length of time before estimates become available

Relevant
• Ability of the data to answer the questions being asked about the economy
BEA’s Data Products

- National
- Industry
- Regional
- International
BEA’s Data Products

National

- Total U.S. GDP
- Personal income
- Corporate profits

Industry

Regional

International
BEA’s Data Products

National
- Total U.S. GDP
- Personal income
- Corporate profits

Industry
- GDP by Industry
- Input-output accounts
- Travel and tourism accounts

Regional

International
BEA’s Data Products

National
- Total U.S. GDP
- Personal income
- Corporate profits

Industry
- GDP by Industry
- Input-output accounts
- Travel and tourism accounts

Regional
- GDP by State
- State personal income
- GDP by Metro Area

International
BEA’s Data Products

National
- Total U.S. GDP
- Personal income
- Corporate profits

Industry
- GDP by Industry
- Input-output accounts
- Travel and tourism accounts

Regional
- GDP by State
- State personal income
- GDP by Metro Area

International
- Trade in goods and services
- International transactions
- International investment
BEA’s Data Products

National
- Total U.S. GDP
- Personal income
- Corporate profits

Industry
- GDP by Industry
- Input-output accounts
- Travel and tourism accounts

Regional
- GDP by State
- State personal income
- GDP by Metro Area

International
- Trade in goods and services
- International transactions accounts
- International investment
How are BEA data used?

- Businesses
- Wall Street
- Academics
- Policy Makers
  - White House
  - Congress
  - Federal Reserve Board
How are BEA data used?

A one percent lower real GDP growth rate leads to a total increase in the federal budget deficit of $3,157 billion from 2016-2026.

Source: *Analytical Perspectives*, Office of Management and Budget, Table 2-4.
What is Gross Domestic Product?

- Value of the goods and services produced by the nation’s economy less the value of the goods and services used up in production.
- Two measures:
  - Nominal, or current-dollar, GDP
  - Real GDP
GDP is NOT...
GDP is NOT…

A Welfare Measure
GDP is NOT...

A Welfare Measure

A Static Measure
GDP is NOT...

A Welfare Measure

The Only Tool for Macroeconomic Measurement

A Static Measure
Three Ways to Measure Production

GDP: The sum of final expenditures

- Consumer spending
- Business Investment
- Government
- Net Exports
### Three Ways to Measure Production

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<th>GDP: The sum of final expenditures</th>
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<th>GDI: The sum of payments and costs incurred</th>
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<td>Business Investment</td>
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<td>Net operating surplus</td>
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<td>Consumption of fixed capital</td>
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Three Ways to Measure Production

GDP: The sum of final expenditures

GDI: The sum of payments and costs incurred

Gross Value Added: The sum of gross output less intermediate purchases across all private industries and government

- Consumer spending
- Business Investment
- Government
- Net Exports

- Compensation of employees
- Taxes on production and imports less subsidies
- Net operating surplus
- Consumption of fixed capital

Intermediate purchases
Gross Value Added
Why is income equal to expenditures?
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Why is income equal to expenditures?

- **Goods and Services**
  - **Expenditures** flow to **Labor**
  - **Labor** flow to **Income**
  - **Income** flow to **Goods and Services**

- **Individuals**
  - Flow to **Expenditures**
  - Flow to **Income**

- **Business**
  - Flow to **Expenditures**
  - Flow to **Goods and Services**
Why is income equal to expenditures?

Gross domestic product or expenditure-side production

Gross domestic income or income-side production

Individuals

Business
Expenditure-Side Production (GDP)

\[
C + I + G + X - M = GDP
\]
Expenditure-Side Production (GDP)
Expenditure-Side Production (GDP)

\[ C + I + G + X - M = GDP \]
Expenditure-Side Production (GDP)
Expenditure-Side Production (GDP)

C + I + G + X - M = GDP
Expenditure-Side Production (GDP)

C + I + G + X - M = GDP
Submit Questions to Ask GDP

Please select “Ask GDP” to submit a question.

Comments and questions from other participants visible here.
Income-Side Production (GDI)

\[
\text{Comp} + \text{TOPI} - \text{Subs} + \text{NOS} + \text{CFC} = \text{GDI}
\]
Income-Side Production (GDI)

Comp + TOPI = Subs + NOS + CFC = GDI
Income-Side Production (GDI)
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Comp + TOPI = Subs + NOS + CFC = GDI
Release Cycle for GDP

1. Current quarter
   - Advance estimate
   - First time measured
   - Second & third estimates
   - Revised from Advance
   - Limited data
   - Monthly & quarterly Census data, BLS wages and salaries, trends
   - Data may not directly represent concept
   - Focus is on growth rates

2. Annual revision
   - More robust data
   - Census annual surveys with some product detail
   - Better fit with concepts
   - Lagged source data
   - Focus is on growth rates

3. Comprehensive revision
   - Most complete data
   - Set GDP levels
   - Economic Census foundation
   - Economic Census used to construct input-output table
   - Focus is on dollar levels and growth rates
Revisions to GDP Improve Accuracy

"Best fit" source data

Source Data Quality
Better
Good
Revisions to GDI Improve Accuracy

Composition (share) of source indicators, by type

Source Data Quality
Better
Good

"Best fit" source data
What are the main data sources for GDP and GDI?

- Census Bureau
- Bureau of Labor Statistics
- Other federal agencies (Energy Information Administration, Treasury)
- Private data
Census Advance Report Data BEA Uses in GDP Estimates

Census Produces

- Advance Report on Durable Goods Manufacturers (M3)
- Advance Retail Trade
- Advance International Trade in Goods
- Advance Retail & Wholesale Inventories

BEA uses these to calculate:

- Investment in private equipment; Change in private inventories
- Personal consumption expenditures
- Imports and exports
- Change in private inventories
Census Data BEA Uses in GDP Estimates

**Census Produces**

- M3 & Annual Survey of Manufactures
- Monthly and Annual Retail Trade Surveys
- Monthly and Annual Wholesale Trade Surveys
- Value of Construction Put in Place
- U.S. International Trade in Goods and Services

**BEA uses these to calculate:**

- Investment in private equipment; Change in private inventories
- Personal consumption expenditures; Change in private inventories
- Change in private inventories
- Investment in structures
- Imports and exports
Census Quarterly Data BEA Uses in GDP Estimates

Census Produces

Quarterly Services Survey; Service Annual Survey

Quarterly Financial Report

BEA uses these to calculate:

- Personal consumption expenditures; Private investment in intellectual property
- Corporate profits
- Change in private inventories
Census Data BEA Uses in GDP Estimates

Census Produces

- Economic Census
- County Business Patterns
- State and Local Government Finance Statistics; Census of Governments
- Business Expenses
- Annual Capital Expenditure Survey

BEA uses these to calculate:

- Lots and lots of detail!
- Wages and salaries by industry
- State and local government spending
- Intermediate inputs and value added for selected industries
- Consumption of fixed capital for structures and equipment
Consumer Spending Source Data

Composition (share) of source indicators, by type

- Revised Census Data
- New Census Data
- Other, Non-Census Data
Consumer Spending Components

- **Durable Goods** - Goods with a life span of 3 years or more
  - Approximately 11 percent of consumer spending

- **Nondurable Goods** - Goods with a life span of less than 3 years
  - Approximately 23 percent of consumer spending

- **Services** - Commodities which cannot be stored and are consumed at time and place of purchase
  - Approximately 66 percent of consumer spending
Primary Data Sources for Consumer Spending: Annual Estimates

- **Consumer Spending on Goods:**
  - Census Monthly Retail Trade Survey
  - Census Annual Retail Trade Survey
  - Economic Census
  - Other government sources
  - Private/trade sources

- **Consumer Spending on Services:**
  - Census Services Annual Survey
  - Economic Census
  - Housing Surveys conducted by Census for Housing and Urban Development
  - Other government sources
  - Private/trade sources
Primary Data Sources for Consumer Spending: Current Estimates

- **Consumer Spending on Goods:**
  - Census Monthly Retail Trade Survey
  - Other government sources
  - Private/trade sources
  - Bureau of Labor Statistics price data

- **Consumer Spending on Services:**
  - Census Quarterly Services Survey
  - Other government sources
  - Private/trade sources
  - Bureau of Labor Statistics price data
Importance of Census Retail Sales Data

- Underlying source data for most consumer spending on goods estimates
- Retail sales data provides the best approximation for measuring consumer expenditures on goods because most consumers purchase goods through the retail channel
- Economic Census provides detailed product line tabulations to give a breakdown of product sales in each industry
Importance of Census Services Annual Survey and Quarterly Services Survey

- Underlying source data for many consumer spending on services estimates

- Services Annual Survey and Quarterly Services Survey data provide the most comprehensive revenue and expense patterns in real time on services industries

- For some industries Census provides product and/or household specific details; provide a better alignment with the consumer spending on services structure
Business Investment Source Data

Composition (share) of source indicators, by type:

- Revised Census Data
- New Census Data
- Other, Non-Census Data
Business Investment Components

- Structures
  - Residential
  - Nonresidential
- Equipment
- Intellectual property products
  - Software
  - Research and development
  - Entertainment, literary, and artistic originals
- Change in private inventories
Primary Source Data for Structures

- **Nonresidential**
  - Census Value of Construction Put in Place
  - Prices for single-family houses under construction
  - American Petroleum Institute

- **Residential**
  - Census Value of Construction Put in Place
  - Prices for single-family houses under construction
  - Census retail sales
Primary Source Data for Equipment

- Economic Census of manufactures
- Annual Survey of Manufactures
- Advance Report on Durable Goods Manufacturers (M3)
- Census/BEA trade data
- Motor vehicle data from trade sources
- Bureau of Labor Statistics price data
Primary Source Data for Intellectual Property Products

- **Software**
  - Census Services Annual Survey
  - Census Quarterly Services Survey
  - Bureau of Labor Statistics employment occupational survey

- **Research and development**
  - Economic Census
  - Surveys conducted by Census for the National Science Foundation
  - Companies’ R&D expense data from quarterly and annual financial reports

- **Entertainment, literary, and artistic originals**
  - Census Services Annual Survey
  - Census Quarterly Services Survey
  - Bureau of Labor Statistics current employment statistics
Primary Source Data for Change in Private Inventories

- Economic Census
- Annual Survey of Manufactures
- Advance Report on Durable Goods Manufacturers (M3)
- Advance Retail & Wholesale Inventories (Coming Soon)
- Monthly Wholesale Trade Survey
- Annual Wholesale Trade Survey
- Monthly Retail Trade Survey
- Annual Retail Trade Survey
- Value of Construction Put in Place
- Quarterly Financial Report
- Services Annual Survey
Government Spending and Investment Source Data

<table>
<thead>
<tr>
<th>Advance</th>
<th>Second</th>
<th>Third</th>
<th>1st Annual</th>
<th>2nd Annual</th>
<th>Comprehensive</th>
</tr>
</thead>
</table>

Composition (share) of source indicators, by type:
- Other, Non-Census Data
- New Census Data
- Revised Census Data
Government Spending and Investment Components

- Consumption expenditures:
  - Employee compensation
  - Consumption of fixed capital (CFC)
  - Purchases of intermediate goods and services
  - Less: Own-account investment and sales to other sectors

- Gross investment:
  - Structures, equipment and intellectual property
  - Excludes spending for social benefits, other transfers, interest, and subsidies
Primary Source Data for Federal Government

- Controls based on administrative data
  - Budget
  - Monthly Treasury Statement

- Allocations of spending based on other data
  - BLS Quarterly Census of Employment and Wages
  - Agency reports
  - Census Value of Construction Put in Place
  - R&D Surveys conducted by Census for the National Science Foundation
Primary Source Data for State and Local Government

- Census Bureau
  - *Census of Governments* every five years
  - *Government Finances* series of annual surveys in non-Census years
  - Value of Construction Put in Place
  - Annual surveys of pensions, employment
  - Services Annual Survey, Quarterly Services Survey

- R&D Surveys conducted by Census for the National Science Foundation

- BLS Quarterly Census of Employment and Wages
International Trade Source Data

Composition (share) of source indicators, by type:

- New Census Data
- Revised Census Data
- Other, Non-Census Data
Primary Source Data for International Trade

- Monthly Census Bureau trade data
  - With adjustments by BEA to a balance-of-payments basis
  - And other adjustments by BEA from a balance-of-payments basis to a national accounting basis
- BEA quarterly surveys
- Department of Defense data on services and some goods provided by U.S. military agencies
- Department of Homeland Security data on the number of foreign visitors by air
- Office of Travel and Tourism Industries survey of international air travelers
The Third Estimate of 2015Q4 GDP

- Third Estimate: 1.4%
- Second: 1.0%
- Advance: 0.7%
Revisions to 2015Q4 GDP Components

Upward revision to consumer spending

- Census Quarterly Services Survey
- FDIC Call Report

Upward revision to exports

- International transactions account data

Downward revision to inventories

- Revised Census inventory data
Data, Tools, Apps, & Training
Upcoming Data Releases from BEA

- April 21: GDP by Industry, 2015Q4 and 2015
  - Value-added production
- April 28: GDP, 2016Q1 Advance estimate
  - Expenditure-side production
- May 27: GDP and GDI, 2016Q1 second estimate
  - Expenditure-side and income-side production
- June 14: GDP by State, 2015Q4 and 2015
- July 29: 2016 Annual Revision of the National Income and Product Accounts
BEA’s Interactive Data Tables

- National Data
  - GDP & Personal Income
  - Fixed Assets
- Industry Data
  - GDP-by-Industry
  - Input-Output
- International Data
  - International Transactions, Services & IIP
  - Direct Investment & MNEs
- Regional Data
  - GDP & Personal Income

What data will you discover? Find out at:
http://bea.gov/itable/index.cfm
Economic Data from the Census Bureau

• Economic Indicators Briefing Room - http://www.census.gov/economic-indicators/ Access all monthly and quarterly Economic Indicators data presented by the Census Bureau, including the data presented today.

• Business and Industry - http://www.census.gov/econ/
  o Access all of the annual Economic data presented by the Census Bureau, including County Business Patterns and the Census of Governments and Governments Finances

• Economic Census - business.census.gov
  o Access the latest data from the 2012 Economic Census
Census Business Builder

www.census.gov/data/data-tools/cbb
America’s Economy: Mobile App

https://www.youtube.com/watch?v=cd9cZ9sPSpI

Indicators Available:

- Advance Monthly Retail Sales
- Advance Report Durable Goods
- Business Inventories
- Construction Spending
- Consumer Price Index
- Homeownership Rate
- International Trade
- Manufacturers’ Goods
- Monthly Wholesale
- New Residential Construction
- New Residential Sales
- Nonfarm Payroll
- Personal Income
- Producer Price Index
- QFR–Manufacturing
- QFR–Retail Trade
- Quarterly Services Survey
- Real Gross Domestic Product
- Unemployment Rate

www.census.gov/mobile

Available for iPhone, iPad, and Android devices
Did you know that every five years, the U.S. Census Bureau conducts an Economic Census that affects monthly Economic Indicators and their annual counterparts? In this webinar, we will discuss how we trend monthly indicator data to the annual surveys and Economic Census.

**June 29, 2016**

Visit [www.census.gov/econ/webinar](https://www.census.gov/econ/webinar) for a complete list of upcoming webinars.
Questions, Suggestions, & Feedback

John Sperry
Economic Indicators Division
U.S. Census Bureau

Direct Phone: (301) 763-3431
Email: john.sperry@census.gov

Web site: www.census.gov/economic-indicators/
Webinar Website:
http://www.census.gov/econ/webinar

Marissa Crawford
Economist
Bureau of Economic Analysis
National Economic Accounts

Direct Phone: (202) 606-9729
Email: marissa.crawford@bea.gov
Web site: www.bea.gov