Results of the 2016 Annual Update of the National Income and Product Accounts
Results of the 2016 NIPA

• Slight revisions to average growth rates of GDP and GDI from 2012Q4 to 2016Q1
  – GDP growth unrevised at 2.2 percent
  – GDI revised down 0.1 percentage point

• Major sources of revisions:
  – New and revised source data
    • Census Bureau’s annual retail trade survey, service annual survey, construction spending (value-put-in-place), annual survey of manufactures, annual wholesale trade survey, and government finances data, BEA international transactions accounts, IRS business tax return data
  – Methodology improvements
    • Ongoing improvements to seasonal adjustment
    • Advance inventory data
Average annual rates of change
2012Q4 to 2016Q1

<table>
<thead>
<tr>
<th>Metric</th>
<th>Previously Published</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Real GDI</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>PCE Price index</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>
Gross Domestic Product
Average annual rates of change for real GDP 2012Q4 to 2016Q1

- GDP: 2.2 previously published, 2.2 revised
- PCE: 2.6 previously published, 2.6 revised
- Gross private investment: 4.5 previously published, 4.5 revised
- Exports: 2.1 previously published, 2.0 revised
- Imports: 3.2 previously published, 3.3 revised
- Government spending: 0.0 previously published, -0.3 revised

Previously published
Revised
Contributions to the revision to real GDP 2012Q4 to 2016Q1
Contributions to the revision to private fixed investment 2012Q4 to 2016Q1

- Private fixed investment: 0.3
- Nonresidential structures: -0.07
- Nonresidential equipment: 0.13
- Intellectual property products: -0.14
- Residential structures and equipment: 0.39

Percentage points

Private fixed investment: blue
Nonresidential structures: orange
Nonresidential equipment: yellow
Intellectual property products: gray
Residential structures and equipment: light blue
Contributions to the revision to government spending 2012Q4 to 2016Q1

- Government consumption expenditures and gross investment: 0.3
- Federal national defense: -0.06
- Federal nondefense: 0.12
- State and local: 0.30

Percentage points

Government consumption expenditures and gross investment
Federal national defense
Federal nondefense
State and local
# Real GDP growth 2013-2015

<table>
<thead>
<tr>
<th>Percent change from the preceding year</th>
<th>Revised</th>
<th>Previously published</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>2014</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>2015</td>
<td>2.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent change fourth quarter to fourth quarter</th>
<th>Revised</th>
<th>Previously published</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2.7</td>
<td>2.5</td>
</tr>
<tr>
<td>2014</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>2015</td>
<td>1.9</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Contributions to the revision to real GDP growth 2013

GDP was revised from 1.5 to 1.7

Percentage points

2013

0.25
0.09
0.00
0.02

GDP
PCE
Investment
Exports
Imports
GOV
GDP was unrevised at 2.4

Contributions to the revision to real GDP growth 2014
Contributions to the revision to real GDP growth 2015

GDP was revised from 2.4 to 2.6
Real Gross Domestic Product

[Percent change from preceding period, SAAR]
Contributions to the revision to real GDP growth 2015Q1

GDP was revised from 0.6 to 2.0

<table>
<thead>
<tr>
<th>Component</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>1.4</td>
</tr>
<tr>
<td>PCE</td>
<td>0.44</td>
</tr>
<tr>
<td>Investment</td>
<td>0.23</td>
</tr>
<tr>
<td>Exports</td>
<td>-0.5</td>
</tr>
<tr>
<td>Imports</td>
<td>0.03</td>
</tr>
<tr>
<td>GOV</td>
<td>0.46</td>
</tr>
</tbody>
</table>
Contributions to the revision to real GDP growth 2015Q2

GDP was revised from 3.9 to 2.6

<table>
<thead>
<tr>
<th>2015Q2</th>
<th>Percentage points</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>-1.3</td>
</tr>
<tr>
<td>PCE</td>
<td>-1.5</td>
</tr>
<tr>
<td>Investment</td>
<td>-0.67</td>
</tr>
<tr>
<td>Exports</td>
<td>-0.48</td>
</tr>
<tr>
<td>Imports</td>
<td>0.02</td>
</tr>
<tr>
<td>GOV</td>
<td>0.11</td>
</tr>
</tbody>
</table>
Methodology Improvements
Current Issue: seasonality

• Seasonal adjustment
  – Removes regular fluctuations that normally occur at about the same time and same magnitude each year
  – Facilitates analysis and interpretation of economic series

• Findings of BEA’s component-by-component analysis of residual seasonality
  – Tests are sensitive to the period selected-evidence for residual seasonality over some time spans and not for others
  – Residual seasonality can occur when monthly seasonally-adjusted data are rolled up to quarterly values
  – Improved historical data and not-seasonally-adjusted estimates available in 2018

For more information, read *Residual Seasonality in GDP and GDI: Findings and Next Steps* at www.bea.gov/national
Seasonal adjustment improvements

• As usual, all seasonal adjustment factors updated
• Based on the component-by-component review, improvements made to seasonal adjustments:
  – Seasonal adjustment of state & local government investment in structures changed from monthly to quarterly frequency
  – Several detailed price series that hadn’t been seasonally adjusted are now adjusted:
    • PCE services (transportation, communication, insurance)
    • Equipment investment (communications equipment)
    • State & local government (several components)
Average of real GDP growth rates by quarter 2013Q1 to 2016Q1

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Previously Published</th>
<th>Revised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Q2</td>
<td>3.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Q3</td>
<td>3.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Q4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
</tbody>
</table>
Advance inventory data

• Census Bureau will accelerate release of inventory data
  – *Advance Economic Indicators Report* beginning July 28
  – Wholesale and retail trade data for the preceding month
• BEA will incorporate the new data beginning with advance GDP release on July 29
• Impact: Improve BEA’s initial estimates of the change in private inventories
  – Previously, estimates were based on Census data for the first and second months of the quarter and an assumption for the third month
  – Now, advance estimates will be based on three months of Census data
  – Expected to reduce revisions between the advance and second GDP estimates
• On-going collaboration between Census and BEA to improve the accuracy and timeliness of advance GDP estimates.
Revised residential construction data

• **Census Bureau, November 2015**: revised construction spending, 2005 onward for residential improvements

• **BEA’s estimates for investment in residential improvements:**
  – Annual estimates use a 3-year centered moving average of Census data
  – Quarterly estimates are based on other Census and BLS source data

• **BEA’s 2016 Annual NIPA Update includes limited incorporation:**
  – Incorporates revised Census data for 2013 to 2015 on a “best-change” basis
  – Use of moving average dampens impact on GDP trends, cyclical movements
  – Potential revision to the reference year for chain estimates (2009)

• **BEA plans to incorporate full period in its 2018 NIPA update**
Price Indexes
Gross domestic purchases price index
[Percent change from preceding period, SAAR]
Personal consumption expenditures price index

[Percent change from preceding period, SAAR]
Gross Domestic Income
Gross domestic income

• GDI = GDP in concept
  – Incomes earned in production EQUAL the value of the final expenditures of goods and services produced

• Statistical discrepancy
  – Shows the difference (GDP – GDI) in practice

• Average of GDP and GDI
  – Simple average of the two
  – Helps reflect timing and measurement variations in GDP and GDI
Real GDP and real GDI growth rates

[Percent change from preceding period, SAAR]
Statistical discrepancy as a percent of GDP
National income revision in level 2013 to 2015

![Graph showing national income revision from 2013 to 2015. The graph includes bars for national income, compensation, proprietors' income, rental income, corporate profits, net interest, and business transfer payments. The data points are as follows:

- 2013: National income -13.5, Compensation -20, Proprietors' income 0, Rental income 20, Corporate profits 40, Net interest 60, Business transfer payments 80, Total 135.5
- 2014: National income 77.4, Compensation 20, Proprietors' income 0, Rental income 20, Corporate profits 40, Net interest 60, Business transfer payments 80, Total 75.4
- 2015: National income 119.0, Compensation 20, Proprietors' income 0, Rental income 20, Corporate profits 40, Net interest 60, Business transfer payments 80, Total 119.0

The graph shows the changes in billions of dollars for each year.](chart.png)
Real gross domestic income

[Percent change from preceding period, SAAR]
Corporate profits
[Percent change from previous period, SAAR]
Personal income and outlays

- Revisions to average annual growth 2012Q4 to 2016Q1

<table>
<thead>
<tr>
<th>Component</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal income</td>
<td>0.0</td>
</tr>
<tr>
<td>Disposable personal income</td>
<td>0.1</td>
</tr>
<tr>
<td>Personal outlays</td>
<td>0.0</td>
</tr>
<tr>
<td>Real DPI</td>
<td>0.1</td>
</tr>
<tr>
<td>Personal saving rate *</td>
<td>0.5</td>
</tr>
</tbody>
</table>

* average of quarterly revisions over 2013Q1-2016Q1
Personal income
[Percent change from preceding period, SAAR]
Real disposable personal income

[Percent change from preceding period, SAAR]
Personal saving rate
[Personal saving as a percentage of disposable personal income]