Source Data Acceleration & Impacts on GDP

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BEA Advisory Committee Meeting
Washington, DC
November 18, 2016
Source Data Accelerations

• U.S. World Leader – GDP released 30 days after the reference quarter
  – Possible only because of the high quality, timely data provided to BEA by Census and BLS
  – Historically BEA prepared projections for the third month of the quarter, including:
    • Exports and imports of goods
    • Wholesale & retail inventories
    • Nondurable goods manufacturing inventories
    • Construction statistics
Advance Foreign Trade Statistics

• BEA & Census begin publishing advance monthly foreign trade statistics July, 2015

• Advance statistics available at an aggregate level

**Exports and imports of goods**

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foods, feeds, and beverages</td>
</tr>
<tr>
<td>Industrial supplies and materials</td>
</tr>
<tr>
<td>Capital goods, except automotive</td>
</tr>
<tr>
<td>Automotive vehicles, engines, and parts</td>
</tr>
<tr>
<td>Consumer goods, except food and automotive</td>
</tr>
<tr>
<td>Other goods</td>
</tr>
</tbody>
</table>
Projection Error Before and After Incorporation of Census Advance Report Data
Exports of General Merchandise
(Balance-of-payments basis, seasonally adjusted)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>-1,193</td>
<td>4,325</td>
<td>-1,032</td>
<td>990</td>
<td>913</td>
<td>-319</td>
<td>-735</td>
<td>1,597</td>
<td>-152</td>
<td>-2,204</td>
</tr>
<tr>
<td>After</td>
<td>468</td>
<td>433</td>
<td>-417</td>
<td>735</td>
<td>340</td>
<td>570</td>
<td>-13</td>
<td>509</td>
<td>-55</td>
<td>816</td>
</tr>
</tbody>
</table>

* The Census Advance Report on U.S. International Trade in Goods was introduced with June 2015 data, so these values are simulated for all prior periods.

NOTE: Projection error here is defined as the difference between the projection for the advance estimate of GDP and the same observation in the second estimate.
Projection Error Before and After Incorporation of Census Advance Report Data
Imports of General Merchandise
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</thead>
<tbody>
<tr>
<td>Before</td>
<td>2,178</td>
<td>-891</td>
<td>-2,002</td>
<td>-4,962</td>
<td>-1,414</td>
<td>798</td>
<td>1,156</td>
<td>4,996</td>
<td>-2,541</td>
<td>1,830</td>
</tr>
<tr>
<td>After</td>
<td>-1,497</td>
<td>-24</td>
<td>23</td>
<td>1,430</td>
<td>-56</td>
<td>583</td>
<td>252</td>
<td>106</td>
<td>-800</td>
<td>227</td>
</tr>
</tbody>
</table>

* The Census Advance Report on U.S. International Trade in Goods was introduced with June 2015 data, so these values are simulated for all prior periods.

NOTE: Projection error here is defined as the difference between the projection for the advance estimate of GDP and the same observation in the second estimate.
Advance Inventories

• Advance wholesale and retail inventories released for first time July 2016
  
  – Inventory change is challenging to project for the missing month
Advance Retail Trade Inventories

Comparison of Revisions

* The Census Advance Economic Indicators report, including wholesale and retail inventories, was first introduced with June 2016 data. Quarters denoted with an asterisk reflect simulated revisions.
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Advance Quarterly Services Survey

• February 2017 first release of “advance” QSS statistics – will be reflected in February 28th GDP release (2nd estimate 2016Q4)

• Simulated “Advance” statistics beginning with 2014Q3

• Revisions potentially shift from 3rd to 2nd GDP estimate.
Advance QSS Planned Coverage

Key
- Orange circle: industry chosen for clearance
- Blue circle: goal clearance industry
- Green circle: industry selected for publication

Total:
- 22
- 48
- 49
- 51
- 52
- 53
- 54
- 55
- 56
- 71
- 721
- 81
- 813
- 811
- 812

United States Census Bureau
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

Bureau of Economic Analysis
U.S. DEPARTMENT OF COMMERCE
Comparison of Revisions
Health Care Services

<table>
<thead>
<tr>
<th></th>
<th>2014q3</th>
<th>2014q4</th>
<th>2015q1</th>
<th>2015q2</th>
<th>2015q3</th>
<th>2015q4</th>
<th>2016q1</th>
<th>2016q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision from BEA Assumption</td>
<td>14.6</td>
<td>17.1</td>
<td>1.3</td>
<td>4.3</td>
<td>-0.7</td>
<td>-7.3</td>
<td>14.1</td>
<td>18.0</td>
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<tr>
<td>Revision from Advance QSS</td>
<td>1.0</td>
<td>-1.8</td>
<td>1.5</td>
<td>2.2</td>
<td>-4.3</td>
<td>0.8</td>
<td>4.5</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Note: Revision from Advance QSS reflects unpublished data that were used to simulate "second estimate" statistics for all periods above.
Comparison of Revisions
Nonprofit Hospitals

<table>
<thead>
<tr>
<th></th>
<th>2014q3</th>
<th>2014q4</th>
<th>2015q1</th>
<th>2015q2</th>
<th>2015q3</th>
<th>2015q4</th>
<th>2016q1</th>
<th>2016q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision from BEA Assumption</td>
<td>4.0</td>
<td>12.2</td>
<td>-2.6</td>
<td>-6.0</td>
<td>-11.7</td>
<td>-10.1</td>
<td>7.7</td>
<td>11.6</td>
</tr>
<tr>
<td>Revision from Advance QSS</td>
<td>1.6</td>
<td>-2.3</td>
<td>0.1</td>
<td>0.9</td>
<td>-4.8</td>
<td>-0.6</td>
<td>4.1</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Note: Revision from Advance QSS reflects unpublished data that were used to simulate "second estimate" statistics for all periods above.
Comparison of Revisions
Physician Services

Note: Revision from Advance QSS reflects unpublished data that were used to simulate "second estimate" statistics for all periods above.
Beyond Acceleration...

• Improved harmonization of quarterly GDP Statistics

• Big Data

• Other?
Improved Harmonization

• July 2016 marked the first [near] coincident quarterly GDP by industry and quarterly GDP by State

• Re-examined processes:
  – Accelerated delivery of GDP by industry data
  – Integrated regional staff into GDP by industry review
• “Advance” GDP by Industry statistics

• Back-to-back NIPA 3rd estimate/Industry/Regional GDP release
“Advance” GDP by Industry Statistics

• Prepare internal “advance” quarterly I-O tables primarily to inform featured NIPA final demand
  – Advance quarterly I-O process would be markedly different from current quarterly process
    • Reliant on t-1 statistics
    • Incorporate best available output indicators
    • Evaluate nominal and real I-O ratios
    • Allow final demand to “float”
Many different possibilities here, including:

• Balance Use table with “preliminary” final demand (FD) controls from NIPA then identify issues during balancing and adjust FD as needed

• Weighted-least squares approach
  – Attach quality-weights to all elements of the use table, including FD, and balance.
  – Final demand not a hard control under this approach
• Accelerate industry and regional by about 30 days
  – Re-think current processes
  – More highly integrated approach
  – Jointly develop industry-level gross operating surplus statistics within an I-O framework
    • Industry level gross output would inform NIPA industry-level income components
  – Output indicators largely available in time (QSS, M3, MRTS, MWTS, and VPIP)
  – Benefit from I-O and regional analysis
  – Customers receive full suite of quarterly GDP statistics within a few days of each other
# BEA Use Table

<table>
<thead>
<tr>
<th>COMMODITIES</th>
<th>INDUSTRIES</th>
<th>FINAL USES</th>
<th>Total Commodity Output and Value Added</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mining and Construction</td>
<td>Manufacturing</td>
<td>Trade and Transportation</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Trade and Transportation</td>
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<tr>
<td></td>
<td>Utilities</td>
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<tr>
<td></td>
<td>Finance, Insurance, and Real Estate</td>
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<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Compensation</td>
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<tr>
<td></td>
<td>Taxes on Production and Imports</td>
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</tr>
<tr>
<td></td>
<td>Gross Operating Surplus</td>
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<td></td>
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<tr>
<td>Total Industry Output and Final Uses</td>
<td></td>
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</tr>
</tbody>
</table>
Committee Member Thoughts?

• What are your priorities regarding quarterly GDP?

• What’s most beneficial to you and to BEA customers?

• Setting aside SA issues, what are leading weaknesses in the quarterly GDP statistics?