National Accounts Data Users’ Conference:

Briefing on the 2013 Comprehensive NIPA Revision

Washington D.C.
May 15, 2013
2013 Comprehensive Revision of the National Income and Product Accounts

Brent Moulton
Agenda

- Opening Remarks - Steve Landefeld

- Overview of the Comprehensive Revision - Brent Moulton

- Capitalization of Intangible Assets - Robert Kornfeld
  - Research & Development
  - Entertainment, Literary, & Artistic Originals

Coffee break

- Accrual Measures of Defined Benefit Pensions - Dylan Rassier

- Statistical Improvements - Nicole Mayerhauser
Overview

My remarks will address several questions:

- What is a comprehensive revision?
- What major changes are coming?
- Why is BEA making these changes?
- When will the revised data be available?
- Where can I learn more?
Comprehensive Revisions

- Occur about every five years (this is the 14th)
- Incorporate the results of the 5-year economic census and the benchmark input-output accounts
- Update the reference year for prices, quantities
- Opportunity to introduce major changes in concepts, methods, and tables
- The entire time span is potentially open for revisions
Major Changes

- Benchmark input-output accounts for 2007
- Reference year updated to 2009
- Major conceptual changes:
  - Capitalize research & development
  - Capitalize entertainment, literary, and artistic originals
  - Accrual treatment of defined benefit pension plans
- Major statistical changes:
  - Improved measures of banking services
- Major table changes:
  - Intellectual property products
  - New pension tables
Reasons for Change

- Changes in the economic environment
  - Growing importance of intellectual property products in business, productivity
- Financial crisis and recession
  - Exposed vulnerabilities in pension promises
  - Data gaps in financial services
- Updated international guidelines
  - Maintain comparability of GDP across countries, while allowing accounts to remain up-to-date
International guidelines for national economic accounts

- Used by national statistical offices, international organizations
- Major update from SNA 1993

BEA was a major participant in the task forces and advisory expert groups charged with updating these guidelines

- U.S. was one of the countries that made the case for updating the SNA

SNA 2008 changes such as capitalizing R&D will soon be made by all major countries
Communicating with Users

- BEA’s 5-year strategic plan
- Plans for 2013 comprehensive revision announced
  - August 2012 *Survey of Current Business*

- BEA solicits feedback from many sources:
  - BEA Advisory Committee
  - Conference for Research on Income and Wealth (e.g., 2002 conference, *Measuring Capital in the New Economy*)
  - Users’ conferences and meetings
  - Feedback on articles and presentations
Availability of Revised Data

- GDP news release (July 31, 2013)
  - Concurrent with advance GDP for 2013Q2
  - Information on revisions
  - Revised estimates for some major aggregates

- Personal Income & Outlays (August 2)

- Other tables posted as soon as they can be reviewed and verified

- Article in September issue of Survey of Current Business
Additional Information

- **Survey of Current Business articles:**
  - Banking services (February 2013)
  - Changes in definitions and presentations (March)
  - Statistical changes (May)

- FAQs, BEA Blog

- Working papers

- In June, BEA plans to post information:
  - Table stubs
  - Data release schedule

- For more information, see BEA’s website:
Capitalization of R&D and Entertainment, Literary, and Artistic Originals

Bob Kornfeld
Capitalizing Intangibles: Motivation

- Expenditures on R&D and entertainment, literary, and artistic originals have the characteristics of fixed assets and should be treated as investment:
  - Ownership rights, long-lasting, used in production process

- Capitalizing R&D and entertainment originals is important for:
  - Improving accuracy and relevance of GDP estimates
  - Developing quantitative measures of innovation
  - Identifying sources of economic growth

- Intangible produced assets in the SNA 2008:
  - Computer software; mineral exploration; entertainment, literary, and artistic originals; R&D expenditures
The Knowledge Economy: The Importance of Updating Economic Measurements

[GP, Trillions of dollars]

1985: Worked with IBM to develop more accurate, quality-adjusted, computer prices

1996: Introduced chain-type measures of real GDP that better reflect the prices of high-tech and introduced new semi-conductor prices

2001: Introduced quality-adjusted prices for LANs

2003: Share of GDP using quality-adjusted prices rises to nearly 1/5 of GDP

2006: Published preliminary R&D accounts

2007: Published updated R&D

2009: Published framework for measuring intangibles and innovation

2010: Published expanded and updated R&D accounts

2009: Recognized investment in software and introduced new services measures that capture the effect of new technology

2006: Published preliminary R&D accounts

2007: Published updated R&D

2009: Published framework for measuring intangibles and innovation

2010: Published expanded and updated R&D accounts
R&D: Current vs. New Treatment

**Current treatment**
- Business R&D expenditures are classified as intermediate inputs
- R&D expenditures of nonprofit institutions serving households (NPISH) and governments are included in consumption expenditures

**New treatment**
- R&D expenditures by businesses, NPISH, and governments are counted as fixed investment
- Depreciation of R&D added to consumption of fixed capital (CFC)

**GDP and GDI impacts**
- Private business sector GDP increases by new R&D investment
- Government and NPISH GDP increases by CFC on the stock of R&D capital
- GDI increases by similar amount
### Summary of GDP Impacts: 2007

(billions of dollars)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GDP (published NIPAs)</td>
<td>14,028.7</td>
</tr>
<tr>
<td><strong>Plus</strong>: Business own-account and purchased R&amp;D investment</td>
<td>234.3</td>
</tr>
<tr>
<td><strong>Less</strong>: Overlap with own-account software</td>
<td>23.6</td>
</tr>
<tr>
<td><strong>Plus</strong>: CFC on government and nonprofit R&amp;D assets</td>
<td>103.4</td>
</tr>
<tr>
<td>Total GDP, with R&amp;D as investment</td>
<td>14,342.8</td>
</tr>
<tr>
<td><strong>GDP impact of capitalizing R&amp;D</strong></td>
<td>314.1</td>
</tr>
</tbody>
</table>
Summary of GDI Impacts: 2007

(billions of dollars)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GDI (published NIPAs)</td>
<td>14,040.7</td>
</tr>
<tr>
<td><strong>Plus:</strong> Corporate profits from current production</td>
<td>27.8</td>
</tr>
<tr>
<td>R&amp;D Investment (no longer an expense)</td>
<td>194.5</td>
</tr>
<tr>
<td><strong>Less:</strong> CFC on R&amp;D assets</td>
<td>166.8</td>
</tr>
<tr>
<td><strong>Plus:</strong> Proprietors’ income from current production</td>
<td>3.7</td>
</tr>
<tr>
<td>R&amp;D Investment (no longer an expense)</td>
<td>16.1</td>
</tr>
<tr>
<td><strong>Less:</strong> CFC on R&amp;D assets</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Plus:</strong> CFC on R&amp;D assets</td>
<td>282.6</td>
</tr>
<tr>
<td>Corporate</td>
<td>166.8</td>
</tr>
<tr>
<td>Proprietors’</td>
<td>12.5</td>
</tr>
<tr>
<td>Nonprofits and government</td>
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</tr>
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From R&D Expenditures to GDP Impacts

- Identify R&D investment
  - Sum R&D input costs based on performer data
    - Remove double-counting of software
    - Include depreciation of other fixed assets used to produce R&D
  - Assign investment to owning sector [funder of R&D]
    - Business
    - Household & institution (nonprofit institutions serving households)
    - Government (federal and state and local)
  - Deflate nominal investment

- Estimate R&D capital stocks by owner
  - Create capital stocks with perpetual inventory method
Top Private Business R&D-investing Industries

<table>
<thead>
<tr>
<th>Industry</th>
<th>1987</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceuticals</td>
<td>8%</td>
<td>27%</td>
</tr>
<tr>
<td>Computers &amp; electronic products</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Semiconductors &amp; electronic components</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Aerospace</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>34%</td>
</tr>
</tbody>
</table>
Prices of R&D output are unobserved; output is heterogeneous; most is produced on own-account
- Input-cost price indexes
- Adjustments for productivity

Economic depreciation measures the decline in value of capital as it ages
- Industry-specific depreciation rates for business R&D
- Government and nonprofit depreciation rates based on the business R&D model or on research about the production cycle for certain federal defense and nondefense assets
R&D: Quarterly Estimates

- Private business R&D investment
  - After 2007 - quarterly financial statements (Compustat)
  - Before 2007 - wages and employment

- Federal R&D investment
  - Interpolated based on trends in intermediate R&D services

- NPISH and state and local government R&D investment
  - Interpolated as a smooth trend
Entertainment, Literary, and Artistic Originals

- Original films, sound recordings, manuscripts, etc., that can be used for the production and sale of copies
- SNA recommends that they be capitalized
- Estimates for several types, including:
  - Motion pictures
  - Television programs
  - Books
  - Music compositions and recordings
- June 2011 Survey article
Entertainment Originals: Current vs. New Treatment

▪ **Current treatment**
  ▪ Private expenditures are classified as intermediate inputs

▪ **New treatment**
  ▪ Private expenditures by businesses are counted as fixed investment
  ▪ Depreciation of the stock of entertainment capital added to CFC

▪ **GDP and GDI impacts**
  ▪ Private business sector GDP increases by new investment
  ▪ GDI also increases
Entertainment Originals: Summary of Impacts, 2007

- Preliminary estimates - about $70 billion, or about 0.5 percent of GDP
  - $20 billion in theatrical movies
  - $30 billion in long-lived television
  - $9 billion in original books
  - $8 billion in original music
  - $3 billion in miscellaneous entertainment

- Short-lived entertainment like newspapers, radio, etc. are not capitalized
Little data on production costs
   - Except theatrical movies, pre-2007

Value of Investment = Net Present Value of Revenue (NPV) Minus Non-Artwork Cost
   - Revenue data adjusted to include only revenue from new works
   - Net revenue is estimated by removing non-artwork costs
   - Net revenue is adjusted to include only revenue from new works
   - Adjusted net revenue is multiplied by an “NPV factor” to derive investment value of future revenue stream
     - The discount rate is 7% real
Entertainment Originals: Implementation Plans (cont’d)

- Prices of entertainment assets
  - PPIs, CPIs

- Annual depreciation will follow a geometric pattern, based on trends in NPV over time.
  - Theatrical movies: 9.3%
  - Long-lived television: 16.8%
  - Books: 12.1%
  - Music: 26.7%
  - Miscellaneous: 10.9%
Entertainment Originals: Quarterly Estimates

- For 2007-forward
  - Based on data from the Census Bureau’s quarterly services survey

- Prior to 2007
  - Motion picture investment - data from trade sources
  - Other forms of entertainment originals - trend extrapolation
Intellectual Property Products

- New presentation of NIPA private fixed investment tables:
  - Nonresidential fixed investment
    - Structures
    - Equipment (no longer including software)
    - Intellectual property products
      - Software (currently included with equipment)
      - Research and development
      - Entertainment, literary, and artistic originals
## Private Fixed Investment in Intellectual Property Products

<table>
<thead>
<tr>
<th>NIPA series</th>
<th>Start date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private fixed investment in intellectual property products</strong></td>
<td>1929</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
</tr>
<tr>
<td>Prepackaged</td>
<td>1959</td>
</tr>
<tr>
<td>Custom</td>
<td>1985</td>
</tr>
<tr>
<td>Own account</td>
<td>1985</td>
</tr>
<tr>
<td><strong>Research and development</strong></td>
<td>1929</td>
</tr>
<tr>
<td>Business</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Pharmaceutical and medicine manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Chemical manufacturing, excluding pharmaceutical and medicine</td>
<td>1959</td>
</tr>
<tr>
<td>Semiconductor and other electronic component manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Other computer and electronic product manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Motor vehicles, bodies and trailers, and parts manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Aerospace products and parts manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>1959</td>
</tr>
<tr>
<td>Nonmanufacturing</td>
<td></td>
</tr>
<tr>
<td>Scientific research and development services</td>
<td>1987</td>
</tr>
<tr>
<td>All other nonmanufacturing</td>
<td>1987</td>
</tr>
<tr>
<td>Nonprofit institutions serving households</td>
<td>1959</td>
</tr>
<tr>
<td>Universities and colleges</td>
<td>1959</td>
</tr>
<tr>
<td>Other nonprofit institutions</td>
<td>1959</td>
</tr>
<tr>
<td><strong>Entertainment, literary, and artistic originals</strong></td>
<td>1929</td>
</tr>
<tr>
<td>Theatrical movies</td>
<td>1929</td>
</tr>
<tr>
<td>Long-lived television programs</td>
<td>1949</td>
</tr>
<tr>
<td>Books</td>
<td>1929</td>
</tr>
<tr>
<td>Music</td>
<td>1929</td>
</tr>
<tr>
<td>Other</td>
<td>1929</td>
</tr>
</tbody>
</table>
Accrual-Based Measurement of Defined Benefit Pension Plans for the NIPAs

Dylan G. Rassier
Overview of Forthcoming Changes

- **Accrual-Based Accounting**
  - Consistent with the *System of National Accounts 2008 (SNA)*
  - Matches income earned with related production
  - Replaces current cash-based accounting

- **New Pension Subsector**
  - Consistent with the *SNA*
  - Consistent with the Federal Reserve’s Flow of Funds Accounts
  - “Pass-through” in financial corporate sector

- **New Pension Tables**
  - All defined benefit plans
  - Private plans
  - Federal plans
  - State and local plans
Defined Benefit Pension Concepts

- **Deferred Compensation**
  - Participants forgo compensation today for future benefit payments
  - Benefit payments depend on years of service, final average pay, etc.

- **Components of Pension Costs**
  - **Normal Cost**
    - Benefits accrued currently on services rendered in the current period
    - Borne by employers and possibly employees
  - **Interest Cost**
    - Benefits accrued currently on services rendered in past periods
    - Borne by employers
Defined Benefit Pension Concepts

- **Actuarial Liability**
  - Actuarial value of accumulated benefit entitlements
  - $\Delta = \text{normal cost} + \text{interest cost} - \text{benefits paid} +/-(\text{actuarial assumption changes, plan amendments})$

- **Categories of Actuarial Methods**
  - **Projected benefit obligation (PBO)**
    - Assume future compensation increases
  - **Accumulated benefit obligation (ABO)**
    - Assume benefit accumulations end on the valuation date
Defined Benefit Pension Concepts

- **Plan Assets**
  - Market value of all resources available to satisfy the actuarial liability
  - \( \Delta = \text{contributions} + \text{property income} - \text{benefits paid} - \text{admin. exp.} \)  
    +/-(holding gains/losses, capital transfers)

- **Unfunded Actuarial Liability (UAL)**
  - Actuarial liability – plan assets
SNA Recommendations

- Pension Sector

- Compensation
  - Actual employer contributions
  - Imputed employer contributions
    - Excludes actual employee contributions
    - May include administrative expenses as in-kind income
    - May be negative

- Investment Income
  - Actual property income
  - Imputed property income

Employer Normal Cost

Interest Cost = Contribution Supplements
SNA Recommendations

- Related Household Wealth and Income
  - Wealth = actuarial liability
  - Income = employer normal cost + interest cost
Current Treatment

- No Pension Subsector

- Compensation
  - Actual employer contributions
  - No imputed employer contributions

- Investment Income
  - Actual property income
  - No imputed property income

- Related Household Wealth and Income
  - Wealth = plan assets (i.e., actuarial liability – UAL)
  - Income = actual employer contributions + actual property income
Current Treatment

- Implications for the NIPAs
  - Actual employer contributions often do not reflect benefits accrued
    - Compensation
    - Corporate profits
    - Government consumption expenditures → GDP
  - No income flows for the implicit loan (i.e., the UAL)
    - Personal interest receipts
    - Corporate interest payments → corporate profits
    - Government interest paid → government saving
  - Personal saving and employer saving
    - Depends on imputed employer contributions and imputed interest on the UAL
    - Offsetting inaccuracies (i.e., no affect on national saving)
New Treatment

- **Pension Subsector**
  - “Pass-through” in the financial corporate sector

- **Compensation**
  - Actual employer contributions
  - Imputed employer contributions
    - Normal cost + administrative expenses – actual employee contributions – actual employer contributions
  - Employer Normal Cost

- **Investment Income**
  - Actual property income
  - Imputed interest on the UAL
New Treatment

- Related Household Wealth and Income
  - Wealth = actuarial liability
  - Income = employer normal cost + actual property income + imputed interest on the UAL
Source Data and Methods

- **Private Plans**
  - Tax data for normal cost and actuarial liability back to 2000
  - Extrapolate normal cost and actuarial liability back to 1968
  - ABO with discount rate based on AAA corporate bonds

- **Federal Plans**
  - Actuarial reports for normal cost and actuarial liability back to 1979 (civilian) and 1985 (military)
  - Extrapolate normal cost and actuarial liability back to 1929
  - PBO with discount rate used by federal actuaries

- **State and Local Plans**
  - Actuarial reports for normal cost and actuarial liability back to 2000
  - Extrapolate normal cost and actuarial liability back to 1929
  - ABO with discount rate based on AAA corporate bonds
### Draft Pension Table

<table>
<thead>
<tr>
<th></th>
<th>Annual Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Current receipts, accrual basis</strong></td>
</tr>
<tr>
<td>2</td>
<td>Output</td>
</tr>
<tr>
<td>3</td>
<td>Contributions</td>
</tr>
<tr>
<td>4</td>
<td>Claims to benefits accrued through service to employers</td>
</tr>
<tr>
<td>5</td>
<td>Actual employer contributions</td>
</tr>
<tr>
<td>6</td>
<td>Imputed employer contributions</td>
</tr>
<tr>
<td>7</td>
<td>Household actual contributions</td>
</tr>
<tr>
<td>8</td>
<td>Less: Pension service charges</td>
</tr>
<tr>
<td>9</td>
<td>Household pension contribution supplements</td>
</tr>
<tr>
<td>10</td>
<td>Income receipts on assets</td>
</tr>
<tr>
<td>11</td>
<td>Interest</td>
</tr>
<tr>
<td>12</td>
<td>Monetary interest</td>
</tr>
<tr>
<td>13</td>
<td>Imputed interest from employers for the UAL</td>
</tr>
<tr>
<td>14</td>
<td>Dividends</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>Current expenditures, accrual basis</td>
</tr>
<tr>
<td>16</td>
<td>Administrative expenses</td>
</tr>
<tr>
<td>17</td>
<td>Imputed income payments on assets to persons</td>
</tr>
<tr>
<td>18</td>
<td>Interest</td>
</tr>
<tr>
<td>19</td>
<td>Dividends</td>
</tr>
<tr>
<td>20</td>
<td>Benefit payments and withdrawals</td>
</tr>
<tr>
<td>21</td>
<td>Net change in benefit entitlements</td>
</tr>
</tbody>
</table>
NIPA Flows: Labor Services

Employers $100 \leftarrow \text{Current Labor Services} \rightarrow \text{Employees}$

Compensation = Actual Employer Contributions + Imputed Employer Contributions

$100$
NIPA Flows: Claims to Benefits Accrued

Pension Subsector:

Claims to Benefits Accrued
- Actual Employer Contributions: $70
- Imputed Employer Contributions: $30
- Actual Employee Contributions: $5
- Adjust for Pension Service Charges: -$10
- Output: $10

Employees:

Pension Service Charges (PCE): $10
NIPA Flows: Investment Income

Actual Property Income → $45

Imputed Interest on the UAL → $15

Financial Assets held by the Pension Subsector

Employers

Pension Subsector
NIPA Flows: Investment Income

Pension Subsector

$60

Contribution Supplements

Actual Property Income $45

Imputed Interest on the UAL $15

Employees
NIPA Flows: Other Expenditures

Pension Subsector

- Benefit Payments and Withdrawals: $75
- Net Change in Benefit Entitlements: $80
- Administrative Expenses: $10

Employees

Businesses
Summary of NIPA Flows

1. Current Labor Services
   - Employers
     - Investment Income
       - Financial Assets held by the Pension Subsector
         - 9a. Actual Property Income: $45
         - 10a. Imputed Interest on the UAL: $15
     - Pension Subsector
       - Receipts = $225
       - Expenditures = $225

2. Compensation = Actual Employer Contributions + Imputed Employer Contributions
   - $10
   - $100

3. Actual Employer Contributions
   - $70
4. Imputed Employer Contributions
   - $30
5. Actual Employee Contributions
   - $5
6. Adjust for Pension Service Charges
   - $10

7. Pension Service Charges (PCE)
   - $10

8. Contribution Supplements
   - Investment Income (Imputed Payments)
     - 9b. Actual Property Income: $45
9. Other Expenditures
   - Benefit Payments
     - $75
   - Net Change in Benefit Entitlements
     - (lines 3 + 4 + 5 + 6 + 8 - 11)
     - $80
10. Administrative Expenses
    - $10

Businesses

Current and Former Employees
### Summary Effects

<table>
<thead>
<tr>
<th></th>
<th>Private</th>
<th>Federal</th>
<th>S&amp;L</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compensation</strong></td>
<td>- 1.3% to 0.8%</td>
<td>- 0.9% to 3.0%</td>
<td>- 0.1% to 1.4%</td>
<td>- 1.4% to 3.3%</td>
</tr>
<tr>
<td><strong>Revisions / Published Compensation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Consumption</strong></td>
<td>N/A</td>
<td>- 0.4% to 1.5%</td>
<td>- 0.1% to 0.7%</td>
<td>- 0.4% to 1.6%</td>
</tr>
<tr>
<td><strong>Expenditure Revisions / Published GDP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The table shows ranges of relative revisions for 1968-2009 for private plans and 1929-2009 for federal and state and local plans. Percentages reflect revisions in nominal levels attributable to the new accrual-based accounting treatment for defined benefit pension plans relative to the nominal underlying aggregate. Revisions in levels attributable to other benchmark proposals are not reflected in the table.
### Summary Effects

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<th>Federal</th>
<th>S&amp;L</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imputed Interest on the UAL / Published Net Operating Surplus</strong></td>
<td>- 0.8% to 1.2%</td>
<td>N/A</td>
<td>N/A</td>
<td>- 0.8% to 1.2%</td>
</tr>
<tr>
<td><strong>Imputed Interest on the UAL / Published Current Gov't Expenditures</strong></td>
<td>N/A</td>
<td>1.0% to 5.3%</td>
<td>- 1.1% to 1.4%</td>
<td>1.3% to 6.3%</td>
</tr>
</tbody>
</table>

Note: The table shows ranges of relative revisions for 1968-2009 for private plans and 1929-2009 for federal and state and local plans. Percentages reflect revisions in nominal levels attributable to the new accrual-based accounting treatment for defined benefit pension plans relative to the nominal underlying aggregate. Revisions in levels attributable to other benchmark proposals are not reflected in the table.
## Summary Effects

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<thead>
<tr>
<th></th>
<th>Private</th>
<th>Federal</th>
<th>S&amp;L</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employer Saving</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revisions / Published</td>
<td>- 0.9% to</td>
<td>- 3.2% to</td>
<td>- 1.5% to</td>
<td>- 3.7% to</td>
</tr>
<tr>
<td>Disposable Personal Income</td>
<td>0.9%</td>
<td>- 0.3%</td>
<td>- 0.1%</td>
<td>- 0.6%</td>
</tr>
<tr>
<td><strong>Personal Saving</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revisions / Published</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.6% to 3.7%</td>
</tr>
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<td>Disposable Personal Income</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

Note: The table shows ranges of relative revisions for 1968-2009 for private plans and 1929-2009 for federal and state and local plans. Percentages reflect revisions in nominal levels attributable to the new accrual-based accounting treatment for defined benefit pension plans relative to the nominal underlying aggregate. Revisions in levels attributable to other benchmark proposals are not reflected in the table.
Statistical Improvements

Nicole Mayerhauser
Overview

- **Other conceptual changes**
  - Reclassify ownership transfer costs of residential property as capital investment
  - Accrual accounting of compensation in NIPA personal income

- **Statistical changes**
  - Source data
  - Estimation methods
Costs of Ownership Transfer

**Current treatment**
- Real estate brokers’ commissions on structures are classified as fixed investment
- Depreciated over the life of the structure (80 years)

**New treatment**
- Commissions on structures and land, title fees, attorney fees, other non mortgage related costs
- Depreciated over the typical holding period (12 years)

**Effects**
- Increase GDP by the newly recognized investment (2007: $60 billion)
- Increase CFC more than investment (2007: $130 billion)
- Decrease net operating surplus (2007: $70 billion)
Costs of Ownership Transfer

Disposal Costs: Pattern of Depreciation

Number of years after sale of fixed asset

percentage of costs remaining in net stock

Sale of fixed asset

Current treatment

New treatment
Harmonize Treatment of Wages and Salaries

- **Current treatment**
  - Accrual basis for GDI, national income
  - Disbursement basis for personal income
  - WALD (wage accruals less disbursements)
- **SNA recommends accrual throughout**
- **Primary source data (QCEW)**
  - Disbursement basis
- **New treatment**
  - All wages & salaries on accrual basis
  - Timing adjustments will be shown in an annual reconciliation table
  - In practice, timing adjustments will be infrequent
Statistical Changes

What are statistical changes?
- Changes in source data
- Changes in estimation methods

Why do we make them?
- Incorporate newly available data
- Incorporate data from new sources
- Address data gaps and other shortcomings
- Incorporate new methods and techniques

When do we make them?
- Annual revisions
- Comprehensive revisions
Regular Source Data Updates

BEA data
- 2007 benchmark input-output accounts
- International transactions accounts

Census data
- 2007 economic census
- Construction spending
- Annual manufactures and services surveys
- Government finance statistics

Other
- BLS quarterly census of employment and wages
- IRS tabulations of business tax returns
- USDA farm statistics
2007 Benchmark Input-Output Accounts

- Internally consistent framework tracking flows of inputs and outputs in the economy
- Provides shares of output and imports to final uses
- Ensures GDP avoids double-counting
- Used to “benchmark” dollar levels for PCE, PFI, and certain income components
- Provides commodity weights for CPI, PPI, and S&L government spending
- Based on detailed 2007 economic census data
Integration with Input-Output Accounts

NATIONAL ECONOMIC ACCOUNTS

- Set benchmark levels of personal consumption expenditures and private fixed investment as well as other NIPA components

INDUSTRY ECONOMIC ACCOUNTS

- NIPA provides annual levels of personal consumption expenditures, private fixed investment, government consumption and investment

- NIPA provides GDI components of profits, proprietors’ income, rental income, compensation, used in reconciliation of benchmark I-O value added
Integration with Input-Output Accounts

▪ New approach
  ▪ I-O account will be published after the NIPAs release
  ▪ NIPAs and I-O will be fully consistent at release of I-O
  ▪ Annual time series I-O accounts and BM I-O account are consistent with each other and with NIPAs

▪ New Process
  ▪ Closer collaboration on conceptual improvements (like R&D and Entertainment Originals)
  ▪ Shared production schedules
  ▪ Improved data transfers
Changes to Estimation Methods

- Improve commercial bank services
- Expand coverage of state and local government-sponsored defined contributions pension plans
- Nonfarm proprietors’ income adjustments
- New data to measure mortgage interest rates
- Expand scope of rents and royalties
- Improve measures of PCE insurance services
- Improve seasonal adjustment of investment in structures
Banking Services

- Include only assets and liabilities with direct customer contact
- Exclude expected credit losses from borrower services
- Improve user cost estimate of depositor and borrower services

- Future work: Extend the reference rate approach beyond commercial banks to thrifts
Effect of smoothing and default adjustment on borrower services
State and Local Government Defined Contribution Plans

- **Current treatment**
  - Only accounts for contributions to TIAA / CREF plans
  - About 30% of all S&L defined contributions plans

- **New treatment**
  - Employer Costs for Employee Compensation (ECEC) survey
  - Provides shares of compensation by type
  - ECEC available 1995 forward, trend extrapolation back

- **Result**
  - Increase in state and local govt. compensation
Proprietors’ Income Adjustments

- **Misreporting adjustment**
  - Incorporate 2006 tax gap study from the IRS NRP
  - Previous study for 2001

- **Corporate partners (CPs) adjustment**
  - Corporate partner income included in IRS partnership and corporate income data
  - Remove CP income from partnership income (NIPA table 7.14, line 2)
  - Research using IRS 1065 K-1 form
  - Conclusion is more CP income than previously assumed is included in IRS data
  - Result is a lower level of nonfarm proprietors’ income
Mortgage Interest

- Mortgage interest
  - Operating expense in rental income of persons
  - Offset by net interest paid by business in overall GDI

- Improved data source to measure mortgage rate
  - Loans types, prepayments, outstanding balances, etc.
  - First introduced in 2011 NIPA annual revision

- Result is lower mortgage interest (lower rate)
  - No effect on overall GDI
  - Higher rental income of persons offset by
  - Lower net interest paid by business
What to Expect Going Forward

- May 2013 *SCB* article on statistical changes
- July 31, 2013 GDP (Including 2013 Q2 Advance)
- August 2, 2013 PI&O (Including June 2013)
- 300+ NIPA tables
- 4.5 million data points
- “Results” *SCB* article in September 2013
- Updated *Concepts and Methods* chapters
National Accounts Data Users Conference:
Briefing on the 2013 Comprehensive NIPA Revision

http://www.bea.gov/gdp-revisions

Questions?
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