Economic Statistics Directions

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The Challenge

Keeping official statistics relevant, timely, and accurate given the changing global economy and the rapidly evolving needs of customers.
Gathering Feedback & Setting Priorities

• Key mechanisms:
  – Policy makers and appropriators (at the Federal and local level)
  – Federal advisory committees
  – Industry associations
  – Academic communities and forums
  – Public feedback channels
  – Expert panel studies
  – International standards and guidelines
Digital Economy

• Multi-dimensional framework for exploration
  – Quality-adjusted prices (smart phones, cloud computing)
  – New digital platforms and business models (ride-sharing apps, advertising-supported digital content)
  – Global IT flows (intellectual property transactions)

• Major challenges
  – Defining the “digital economy”
  – Identifying transactions embedded in accounts but not separately identified

New public-private partnerships for access to non-traditional data
Digital Economy

- 6.9% of U.S. GDP
- Or $1.4 trillion in 2017
- 9.9% average annual growth from 1997 to 2017
- Outpaced overall U.S. economic growth of 2.3%
- 5.1 million jobs in 2017
- 3.3% of total U.S. employment
- $132,223 average annual compensation per worker

Source: Bureau of Economic Analysis
Health Care

• New perspective for ongoing policy debate
  – Health care is a growing share of U.S. GDP
  – Consumer spending on medical care by different types of diseases rather than traditional groupings like hospitals and doctors’ offices
  – Very strong policy interest and increasing public demand for information on this dynamic sector

• Major challenges
  – Limited information from traditional survey-based data sources
  – Building new framework for examining health care costs

(1) “Blending” non-traditional and traditional data sources and (2) collaboration with the scientific community
Health Care

Health care accounts for more than 14% of the U.S. economy.

U.S. consumers spent $2.1 trillion in 2015 on medical services for diseases and conditions.

Per Capita Spending in 2015

- Symptoms & ill-defined conditions
- Circulatory system
- Musculoskeletal system
- Respiratory system
- Endocrine
- Nervous system
- Neoplasms
- Injury & poisoning
- Genitourinary system
- Digestive system
- Mental illness
- Infectious & parasitic diseases
- Other
- Skin & subcutaneous organs
- Complications of pregnancy & childbirth

Includes allergies and flu-like symptoms.

Source: Bureau of Economic Analysis
Health Care

Price Indexes: Survey data only

Source: Bureau of Economic Analysis
Health Care

Price Indexes: Survey + Big data

Source: Bureau of Economic Analysis
Distribution of Income

• Going beyond GDP
  – What do topline numbers like GDP and Personal Income mean for well-being of individuals at different income levels?
  – Top priority—heightened attention from U.S. government officials echoes demands from academic and policy communities

• Major challenges
  – Deciding on concept of income (money income vs. national accounts’ concept of personal income)
  – Access to timely source data with distributional breakouts

Paradigm Shift

Information-sharing across different federal government agencies in ways that abide by legal constraints, including confidentiality requirements
Distribution of Income

Shares of Income by Quintile*

<table>
<thead>
<tr>
<th>Shares of income by type</th>
<th>Bottom quintile</th>
<th>2nd quintile</th>
<th>3rd quintile</th>
<th>4th quintile</th>
<th>Top quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>4%</td>
<td>51%</td>
<td>9%</td>
<td>20%</td>
<td>52%</td>
</tr>
<tr>
<td>Proprietors' income</td>
<td>1%</td>
<td>83%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rental income</td>
<td>5%</td>
<td>52%</td>
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<tr>
<td>Interest and dividends</td>
<td>1%</td>
<td>75%</td>
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<tr>
<td>Transfers</td>
<td>16%</td>
<td>16%</td>
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</tr>
</tbody>
</table>

* Data for 2012

Source: Bureau of Economic Analysis, University of Michigan
Greater Geographical Detail

• Key to evidence-based policy making
  – National statistics are not enough—long-standing commitment to provide finer levels of geographical detail
  – State and municipal decision-makers need data tailored specifically to their localities

• Major challenges
  – Traditional data sources lack detail to break out economic activity in more granular geographic areas
  – Harmonizing top-down and bottom-up estimation methods to gain greater insights from both perspectives

Paradigm Shift

(1) Consistency between national and local area estimates and (2) input from regional-level stakeholders, including new data sources
Greater Geographical Detail

Regional Price Parities

What Does $100 Buy?
The Relative Value of $100 in Each State

Source: Bureau of Economic Analysis
Increasing Accuracy and Timeliness

• The trade-off
  – To make informed decisions, government officials and other policy makers need accurate data that are not subject to large revisions,
  – AND customers are demanding this information in a more timely manner.

• Major challenges
  – Earlier access to data sources from other Federal statistical agencies
  – Filling data gaps in early estimates

Paradigm Shift
(1) Cutting-edge tools (machine learning, artificial intelligence) and (2) an employee base with the right skill sets to apply these tools
Increasing Accuracy and Timeliness

Accuracy: Comparison of Revisions to PCE Health Care Services

Source: Bureau of Economic Analysis
Increasing Accuracy and Timeliness

Timeliness: Simultaneous Quarterly Releases

- **National:** GDP & GDI - 30–90 days
- **Industry:** GDP - 110 days
- **State:** GDP - 120 days

ACCELERATE
Key Takeaway: Paradigm Shifts are Critical

• Statistical agencies must change the way we do business in order to fulfill user demands for more relevant, timely information
  – New forms of collaboration (e.g. public-private partnerships to access non-traditional data, partnerships with outside experts to develop new data products)
  – New estimation approaches (e.g. blending non-traditional and traditional data sources, using cutting-edge data techniques such as machine learning)
  – Public feedback mechanisms for developing new products and gaining access to new data sources
  – Recruitment of multi-disciplinary staff with mix of skill sets