BEA
BUREAU OF ECONOMIC ANALYSIS
U.S. DEPARTMENT OF COMMERCE

Recent Enhancements & Extensions of the Industry Accounts

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Advisory Committee Meeting

Washington, DC

May 9, 2014

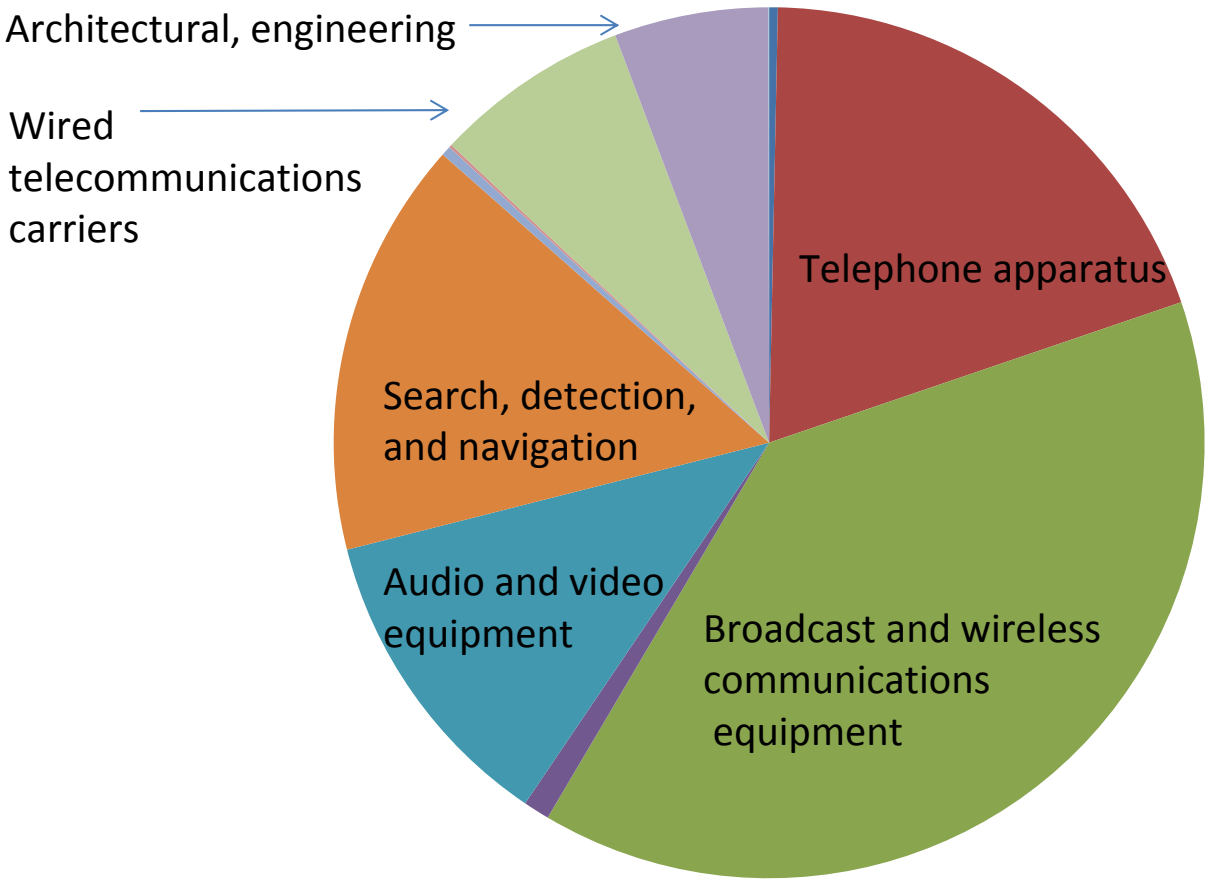
Outline

- State of the Industry Economic Accounts
  - Fully integrated accounts
- Satellite Accounts
- Integrated GDP & Productivity Account at the Industry level
- Quarterly GDP by Industry
- Future Directions

Integration of the National and Industry Economic Accounts

- 2014 comprehensive revision marks the first time that the Industry Economic Accounts (IEAs) and National Income and Product Accounts (NIPAs) are fully consistent with one another
- Benchmark I-O accounts establish both levels and commodity composition of GDP final use categories
  - Provide critical information for estimating GDP (by extrapolation) for periods after benchmark years
- Fully consistent benchmark I-O accounts

Integration: Bridge Tables



Private Fixed Investment in Communications Equipment
$106.2 Billion in 2007

Further Integration Possibilities

- Intellectual property products bridge
- A suite of GDP statistics by legal form of organization, and by industry group?
- Benchmark Gross Domestic Income?

Satellite Accounts

The Arts and Cultural Production Satellite Account (ACPSA)

"The positive value of arts and culture on society has been understood on a human level for millennia. With this new effort, we are now able to quantify the impact of arts and culture on GDP for the very first time."

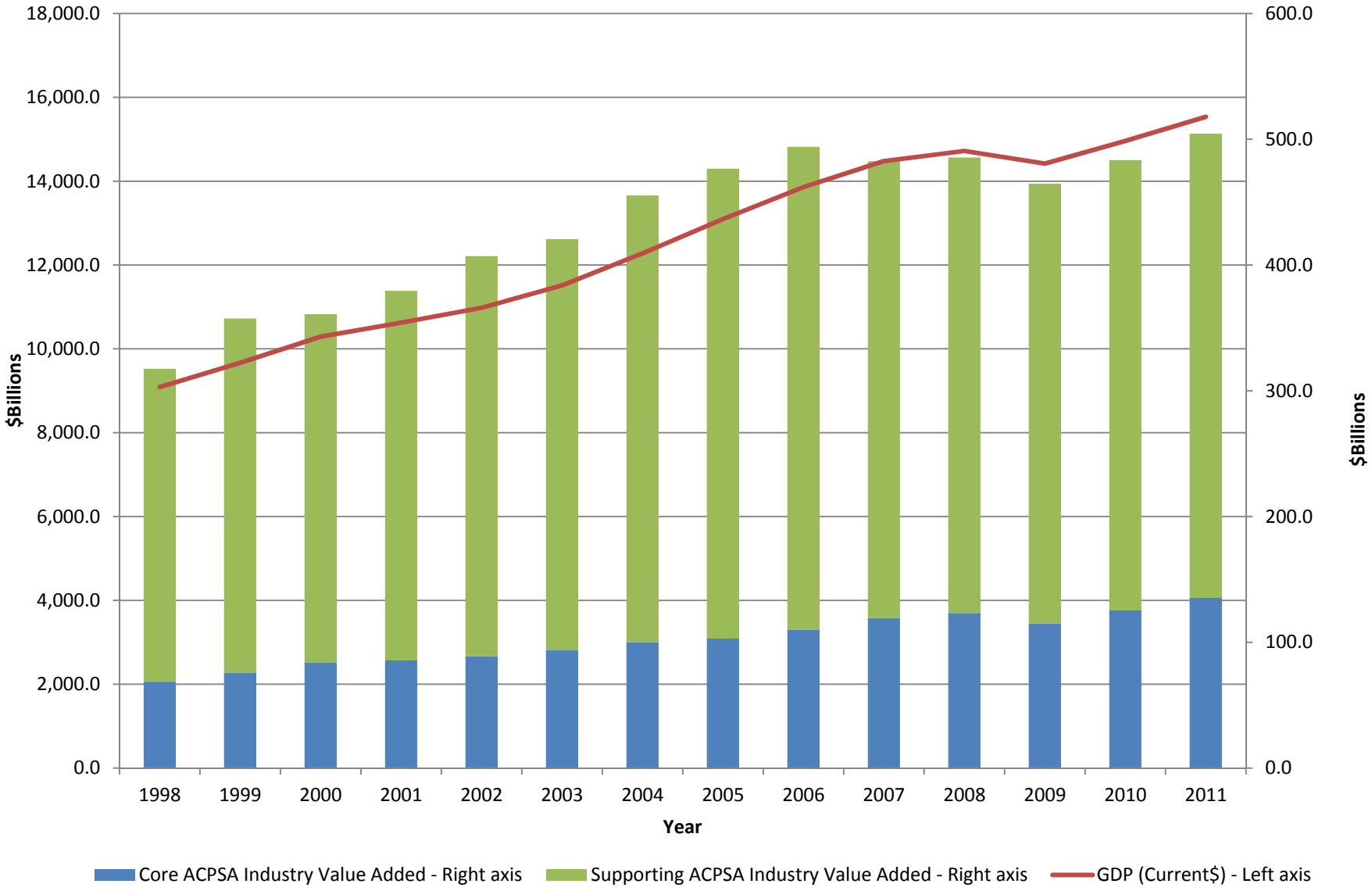
Penny Pritzker

U.S. Secretary of Commerce

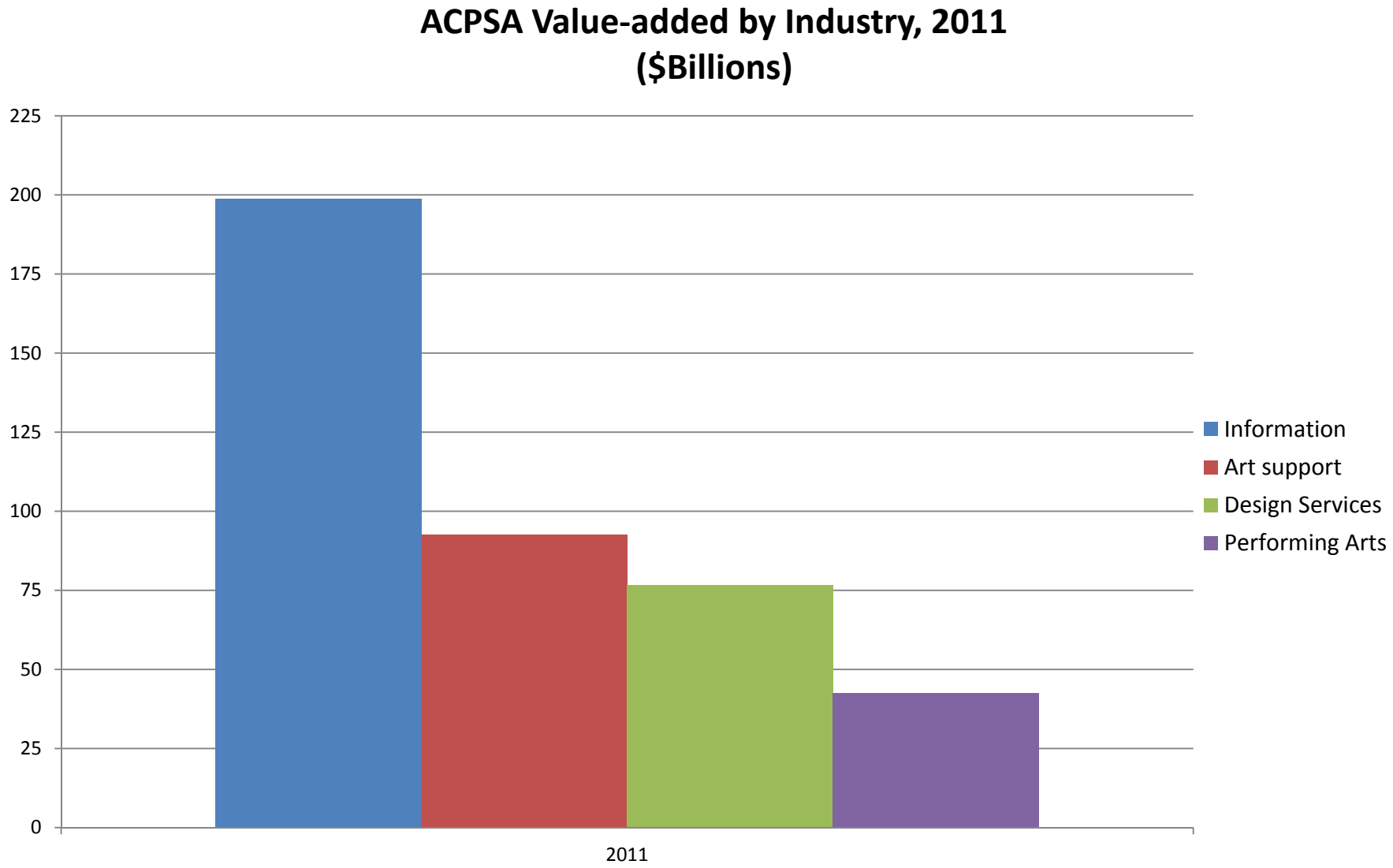
ACPSA—Continued

- Uses BEA's I-O framework to provide:
  - Information on a select group of arts and cultural goods and services that are *currently* in the U.S. GDP accounts, but not clearly visible
  - A detailed accounting of the economic contribution of the arts and cultural sector
  - An estimate of arts and culture employment

GDP versus ACPSA Value Added

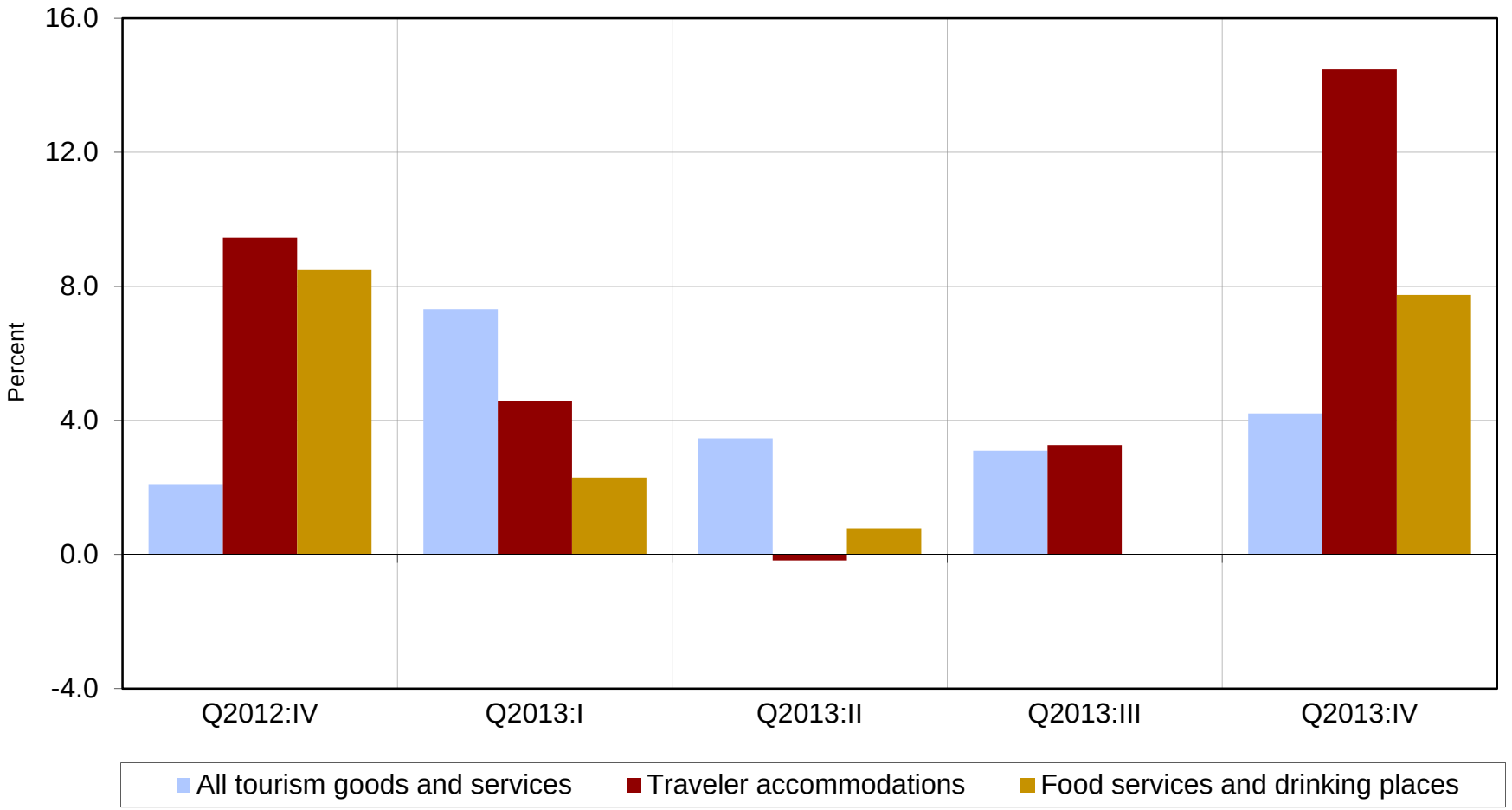


Which industries within the ACPSA are the largest?



Travel and Tourism Satellite Account

Quarterly Growth in Real Tourism Spending



U.S. Bureau of Economic Analysis

Future Satellite Accounts?

- Health care
- Small business account
- Energy
- Factoryless goods producers
- Information and communications technology

Integrated GDP & Productivity Account at the Industry Level

Motivation

- Long-standing call for statistics on the sources of growth
  - Solow (1957), Denison (1967), Griliches and Jorgenson (1967)
  - Postwar Recovery, Big Slump, IT Boom, the Great Recession
  - *"… differences between the BEA and BLS estimates have led many researchers to construct their own measures …"*

    -Jorgenson and Landefeld (2006) in *A New Architecture for the U.S. National Accounts*

- The Advisory Committee on Measuring Innovation in the 21st Century: A Report to the Secretary of Commerce (January 2008)
  - *"Develop annual, industry-level measures of total factor productivity …"*

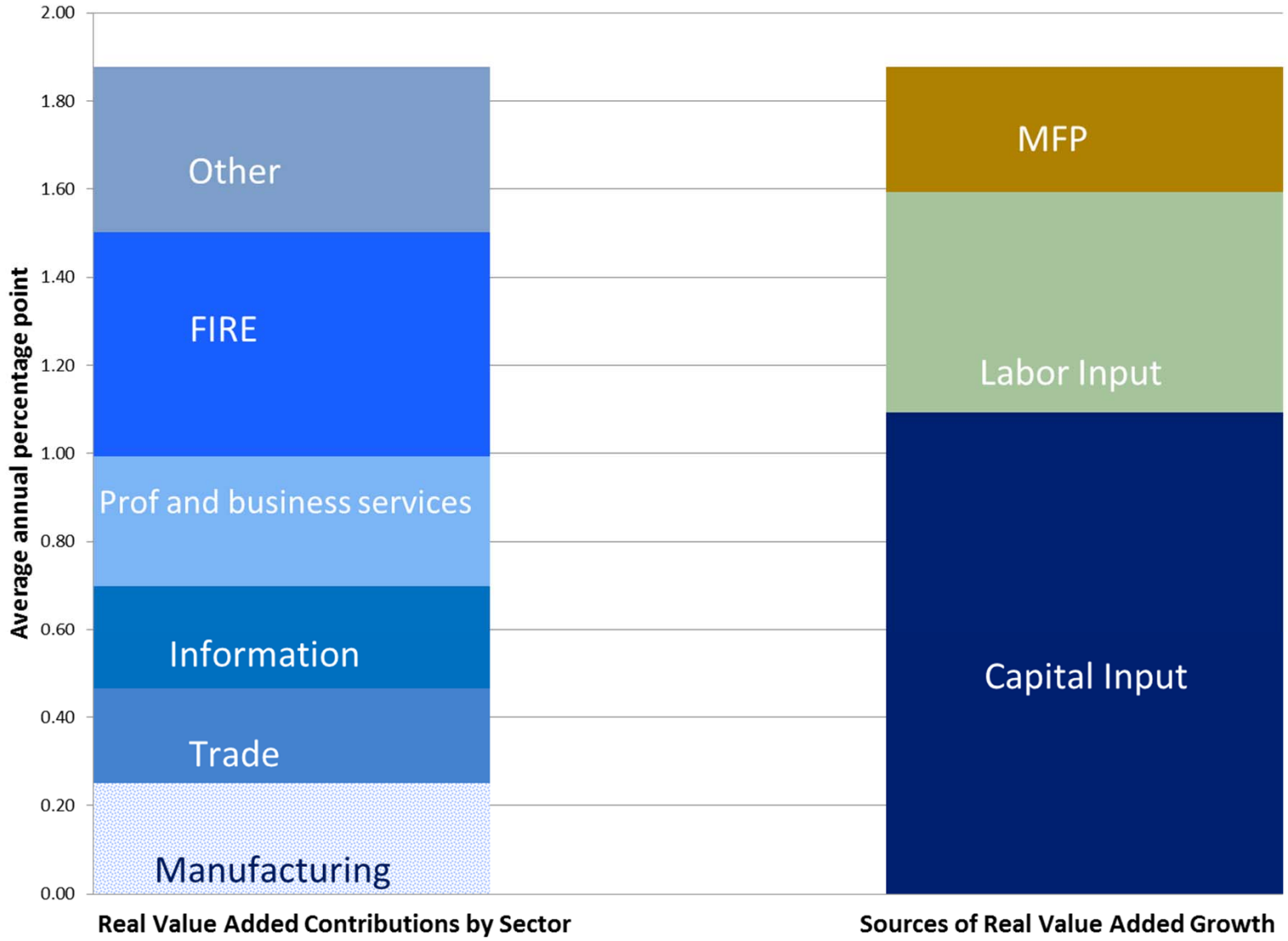
GDP integrated with productivity statistics

- Allows for integrated analysis on the sources of growth in the economy
  - Jorgenson and Landefeld (2006) provided blueprint for United States
  - Harper, Moulton, Rosenthal, and Wasshausen (2009) integrated account for nonfarm business
  - Fleck, Rosenthal, Russell, Strassner, and Usher (2013) integrated account for GDP at the industry level
    - www.bea.gov/industry/index.htm#integrated

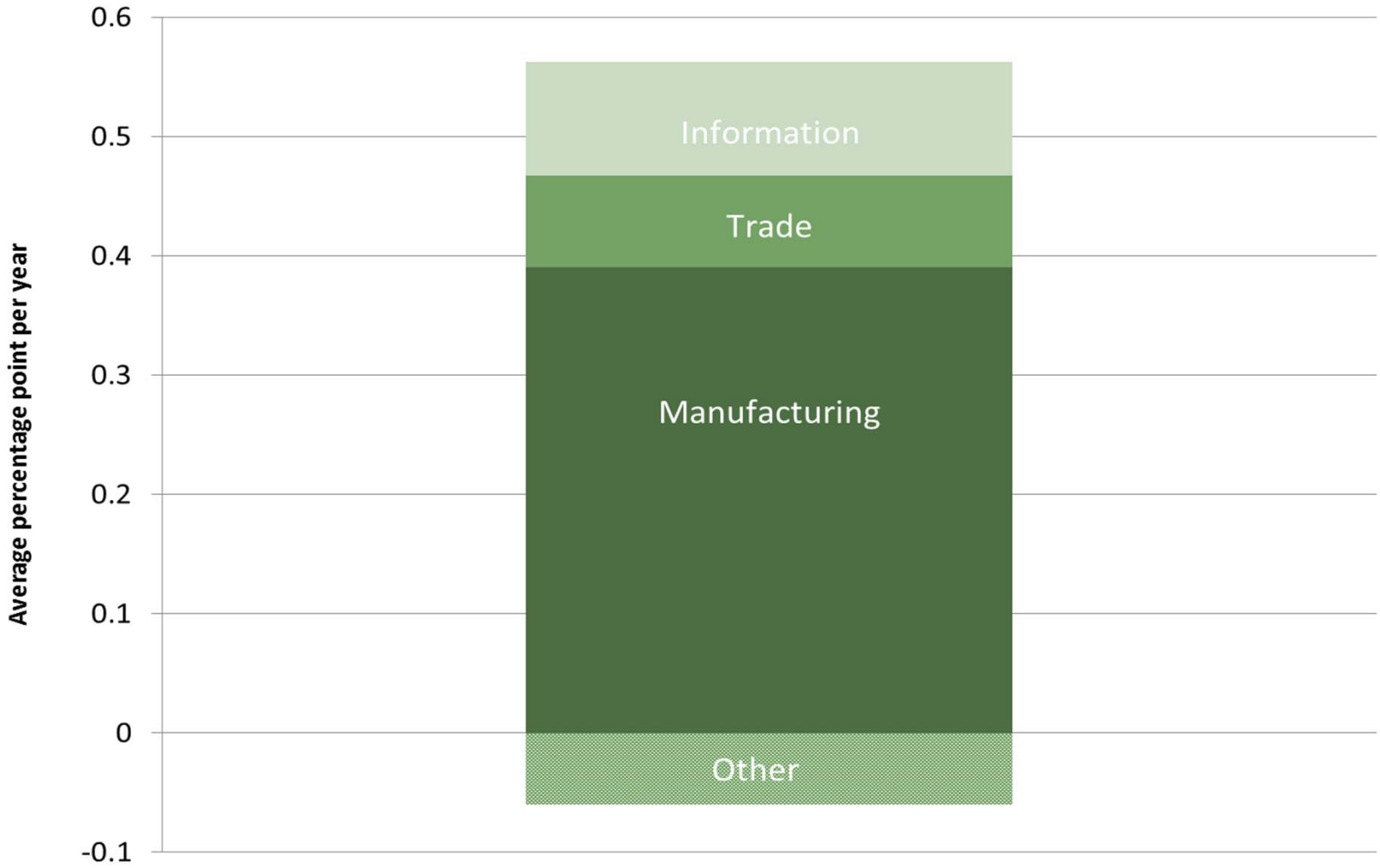
Big picture questions

- What are the industry sources of GDP and multifactor productivity (MFP) growth?
  - For example, what is the role of Manufacturing?
- What is the contribution of:
  - Information-communications-technology to growth and productivity?
  - Intellectual property products to growth and productivity? Forthcoming …

Sources of economic growth, 1998-2011



Sources of multifactor productivity growth



- Manufacturing accounted for more than 75 percent of MFP growth!

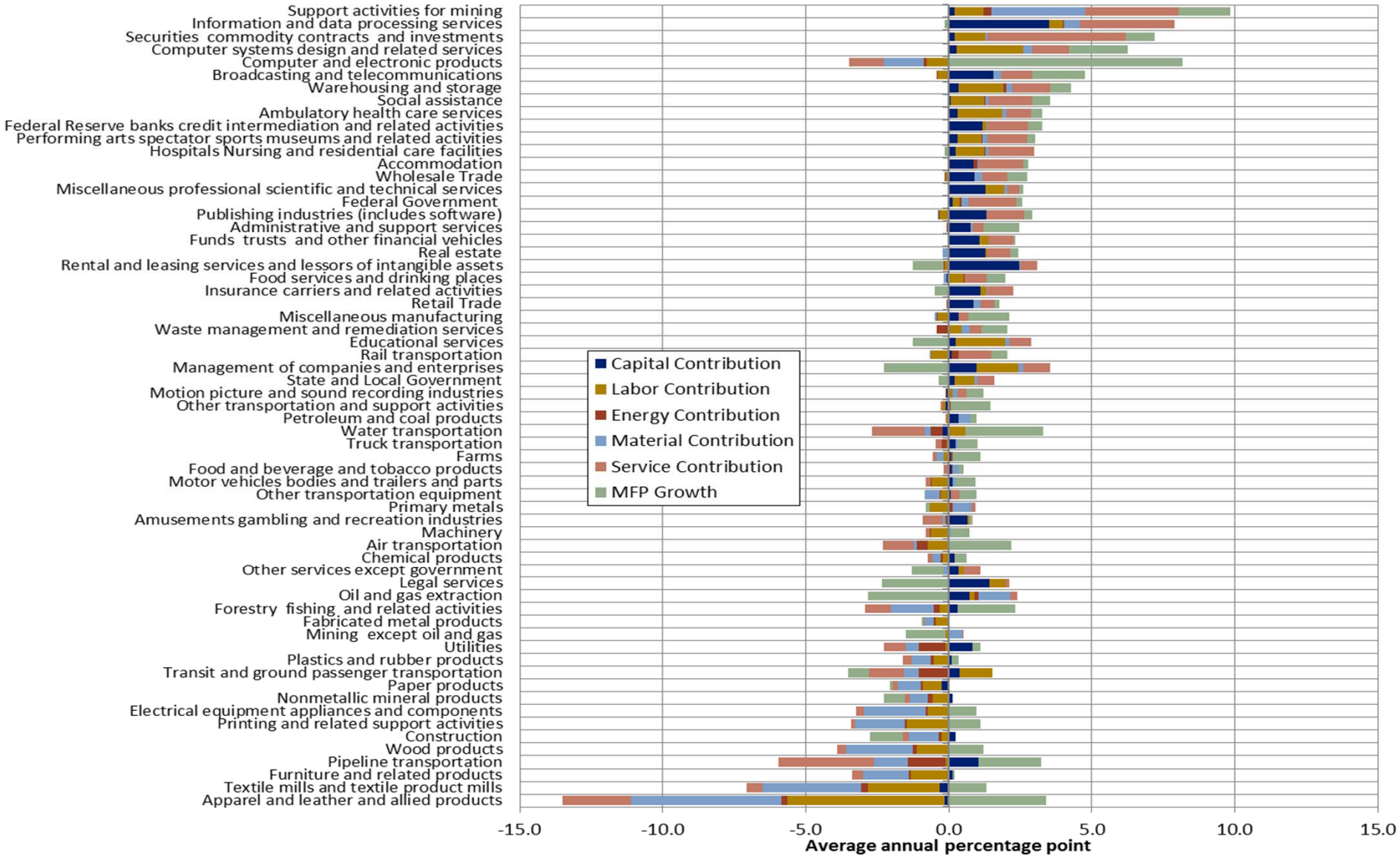
Industry sources of growth analysis

- Requires an industry-level production account
- Consistent with GDP constructed within an Input-Output Framework

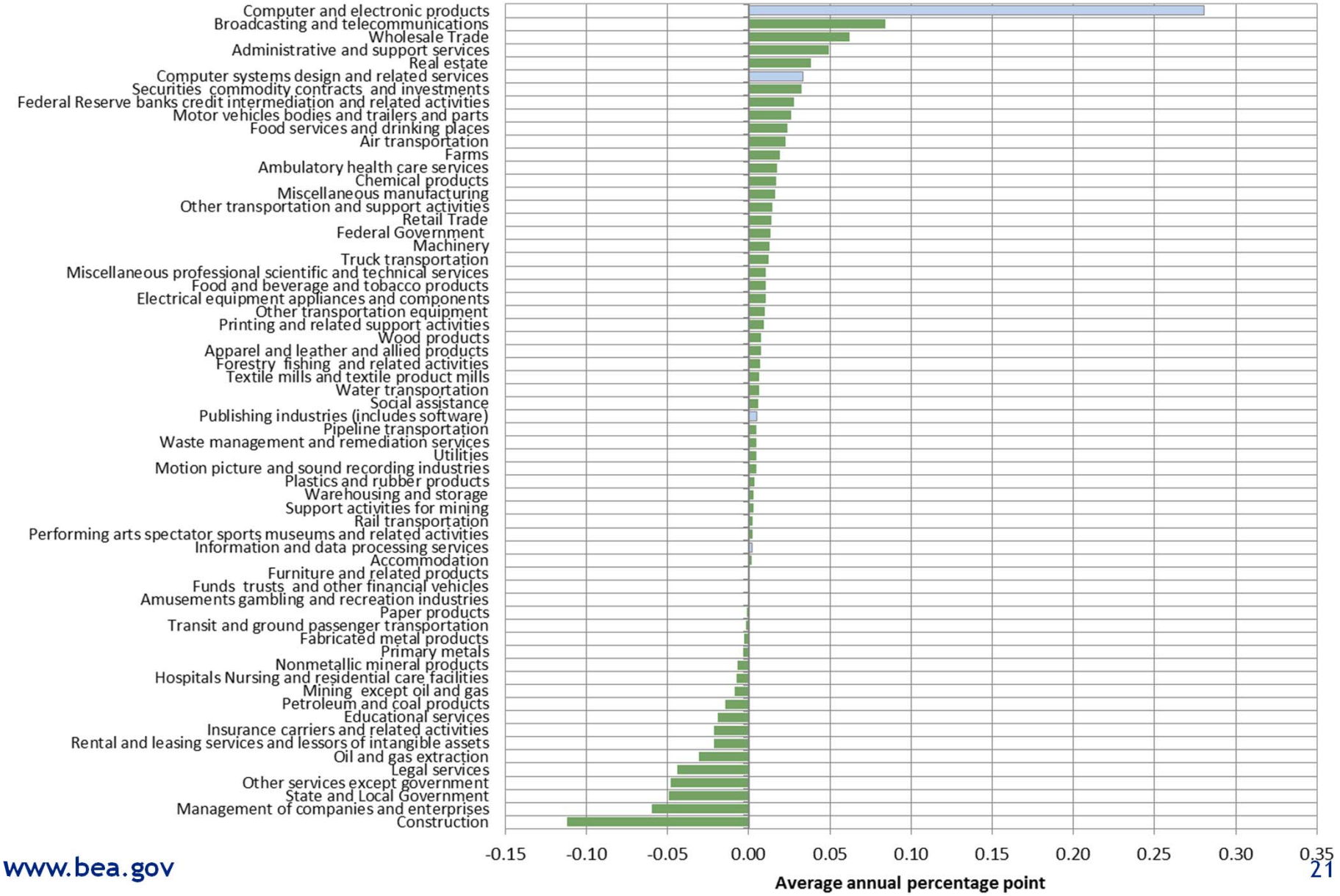
$$Y_Q Y_P = K_Q K_P + L_Q L_P + X_Q X_P = VA_Q VA_P + X_Q X_P$$

- Symmetric treatment of outputs, intermediate inputs, and value-added inputs
  - Gross output, Intermediate inputs, value added: BEA GDP by industry
  - Capital Input: BLS, based on BEA Fixed Assets
  - Labor Input: Hours based on BLS Survey data; Composition, based on work of Jorgenson, Ho, and Samuels (2013)

Gross output growth and sources



Contributions to aggregate MFP by industry



Sources of economic growth

	1998-2011
GDP	1.88
IT-producing industries	0.40
IT-using industries	1.16
Non-IT industries	0.31
Capital Input	1.09
IT-producing industries	0.07
IT-using industries	0.63
Non-IT industries	0.39
Labor Input	0.28
IT-producing industries	0.01
IT-using industries	0.36
Non-IT industries	-0.09
Multifactor productivity	0.50
IT-producing industries	0.32
IT-using industries	0.17
Non-IT industries	0.01

Note: Contributions to GDP growth, avg annual

- Capital input accounted for about 60 percent of growth
  - 60 percent due to IT-using industries
- MFP accounted for 25 percent
  - 65 percent due to IT-producing industries
- Labor input accounted for about 15 percent

Future directions for integrated account

- Near term: Incorporate Intellectual Property Products and results of the comprehensive revision
  - Rosenthal, Russell, Samuels, Strassner, Usher (2014) to be presented at 3rd World KLEMS (http://www.worldklems.net/)
  - Begin regular updates, along with annual revisions
- Longer run?
  - Extend historical accounts – would require historical Input-Output accounts on NAICS
  - Integrated account by Legal form of organization

Quarterly GDP by Industry Statistics for the United States

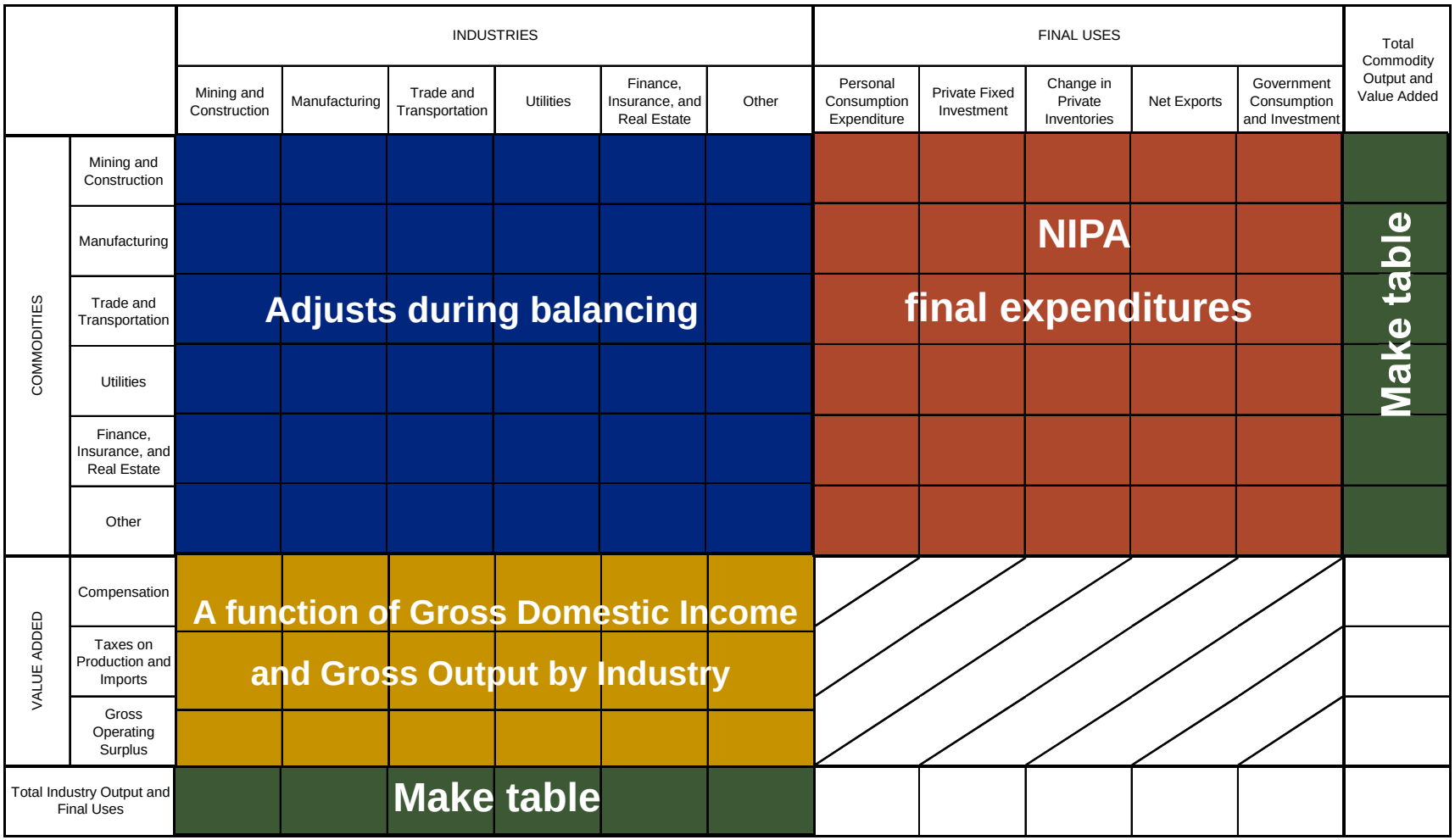
Motivation

- Great Recession and subsequent recovery highlighted need for more "real-time" data
- Supplement existing quarterly/monthly indicators of industry performance—such as employment, sales & shipments, profits, prices
- Comprehensive and consistent picture of industries' overall performance
  - Analyses of business cycle dynamics and the sources of U.S. economic growth

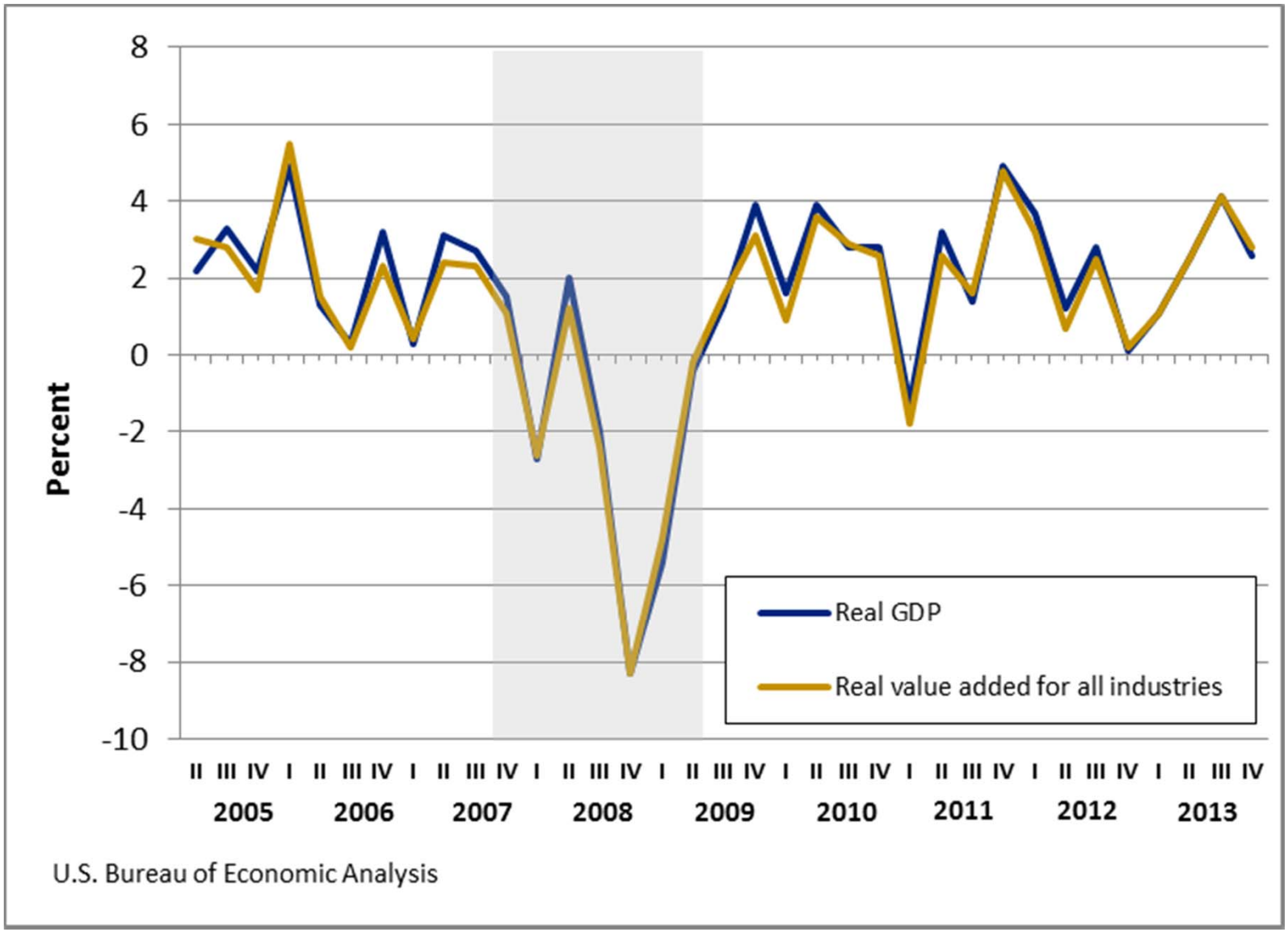
Quarterly GDP by Industry

- Launched April 25th; 2005:I –2013:IV
- Available within 30 days after "3rd" release of GDP
  - Feature real value added by industry
  - Integrated statistics for gross output and intermediate inputs
  - 22 major industry sectors to begin …
- Made possible with the expansion of source data, particularly for the services sector
  - Census Bureau Quarterly Services Survey
  - Bureau of Labor Statistics Producer Price Indexes

Methodology: balanced input-output framework and double deflation

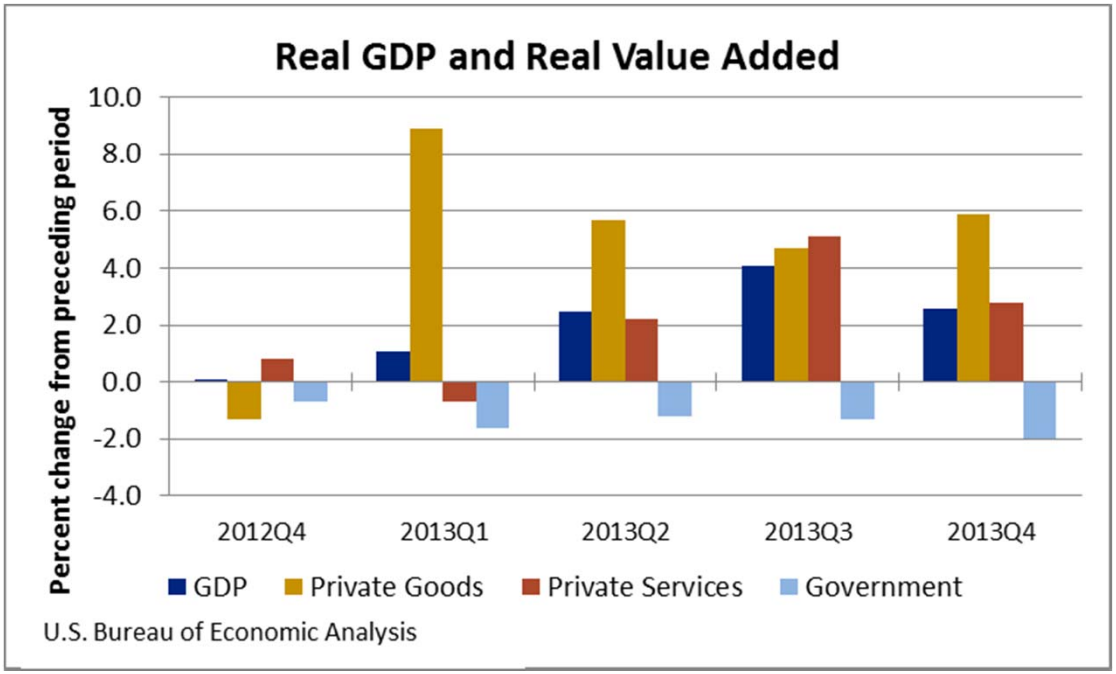


Comparisons of Real GDP

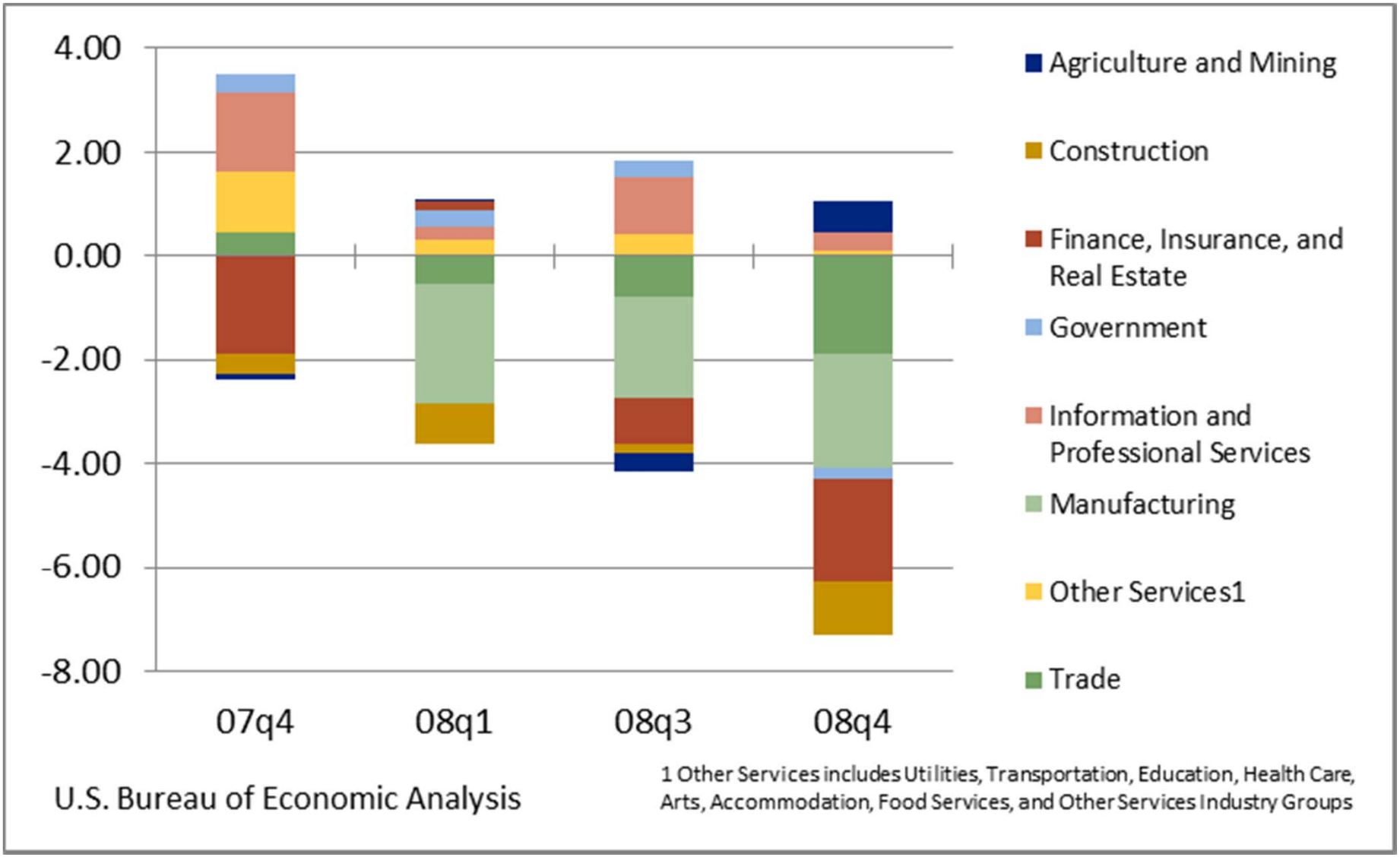


An Inside Look at U.S. Producers

- GDP decelerated in the 4th Quarter – increasing 2.6 percent after an increase of 4.1 percent in the 3rd
  - Slowdown in the services-producing sector—led by real estate rental and leasing, and retail trade
  - Pickup in growth in the Goods sector—led by nondurable-goods manufacturing
  - Government contracted for 5th consecutive quarter



Great Recession and Recovery—revisited



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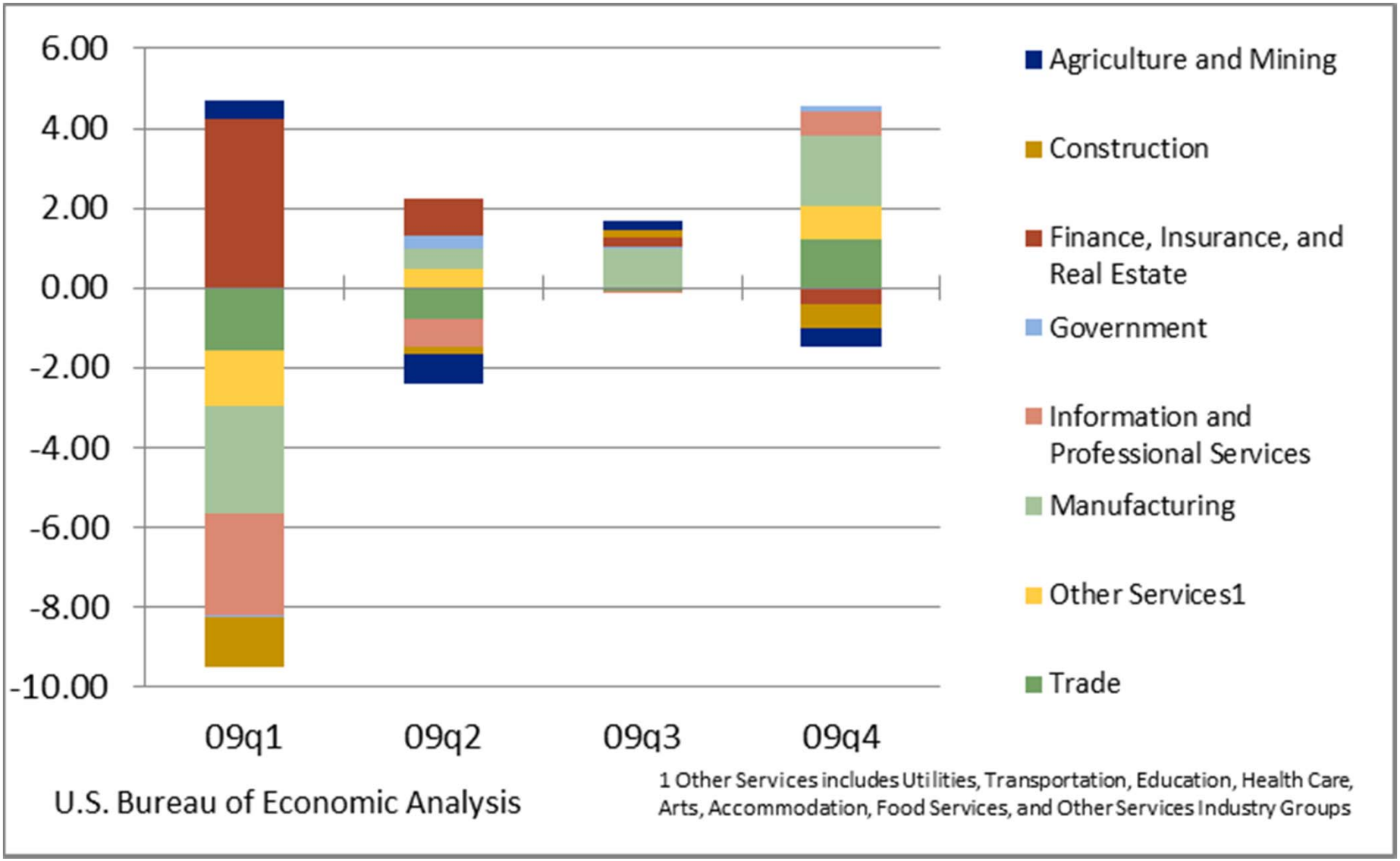
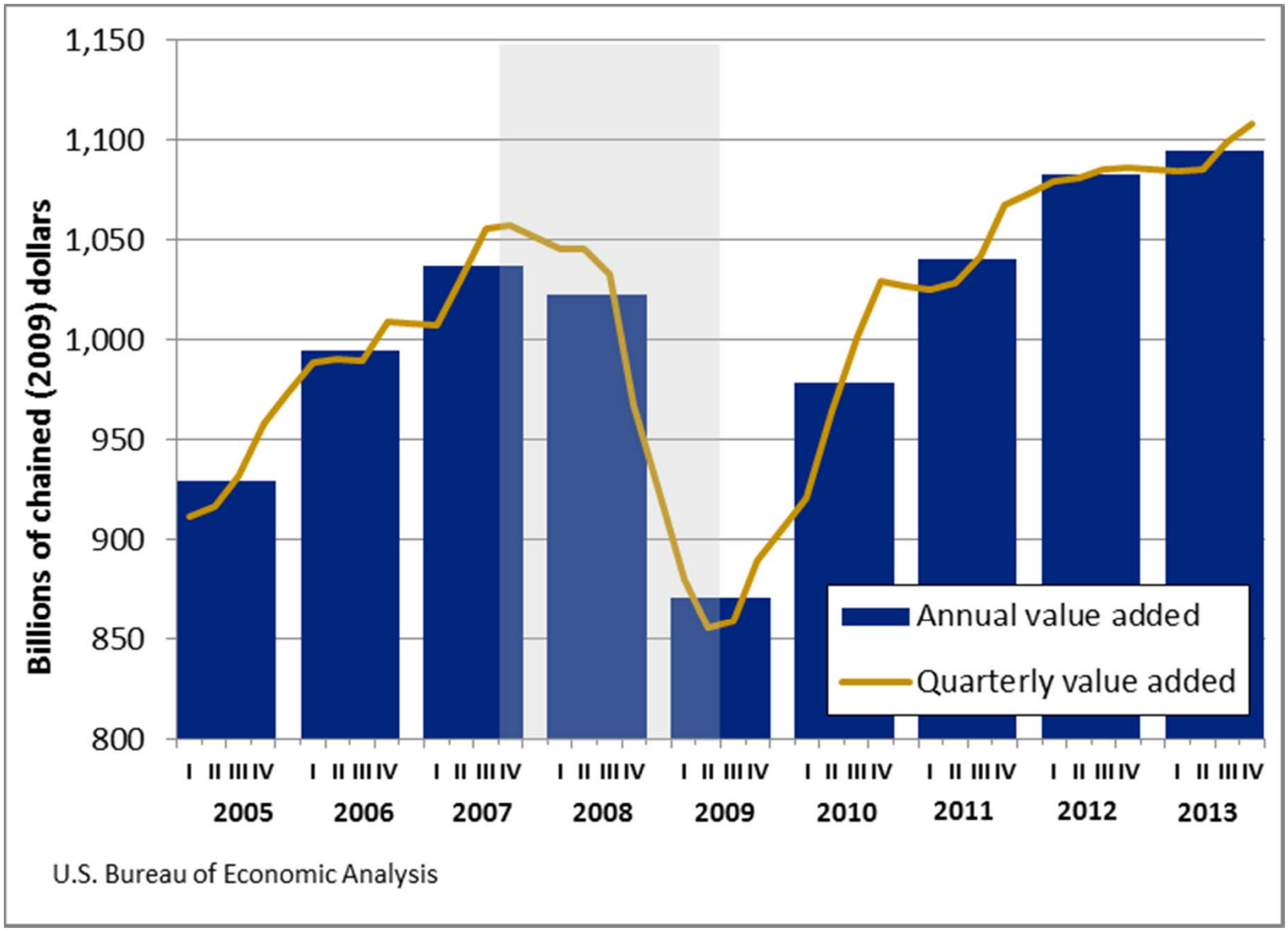
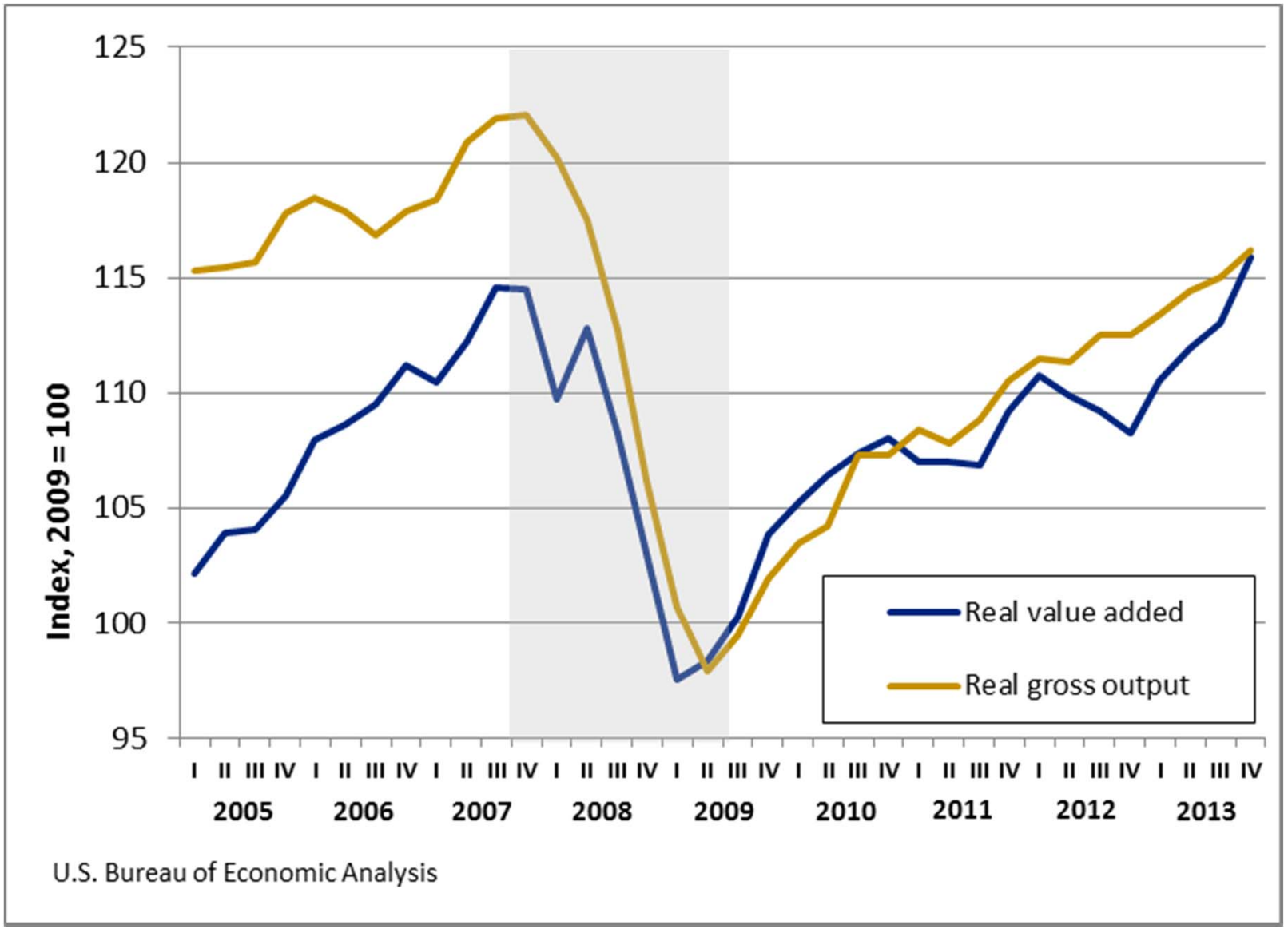


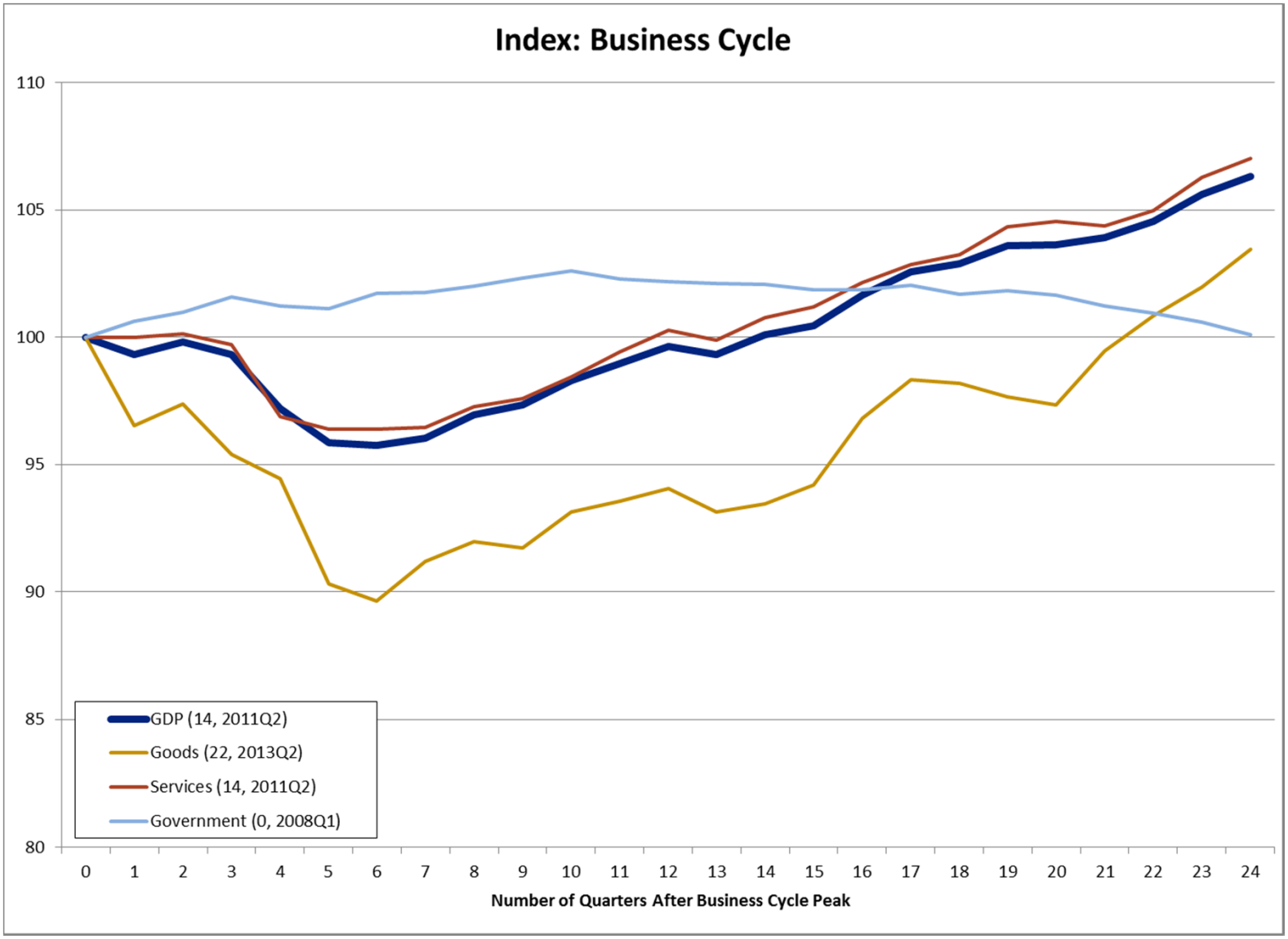
Durable-goods manufacturing



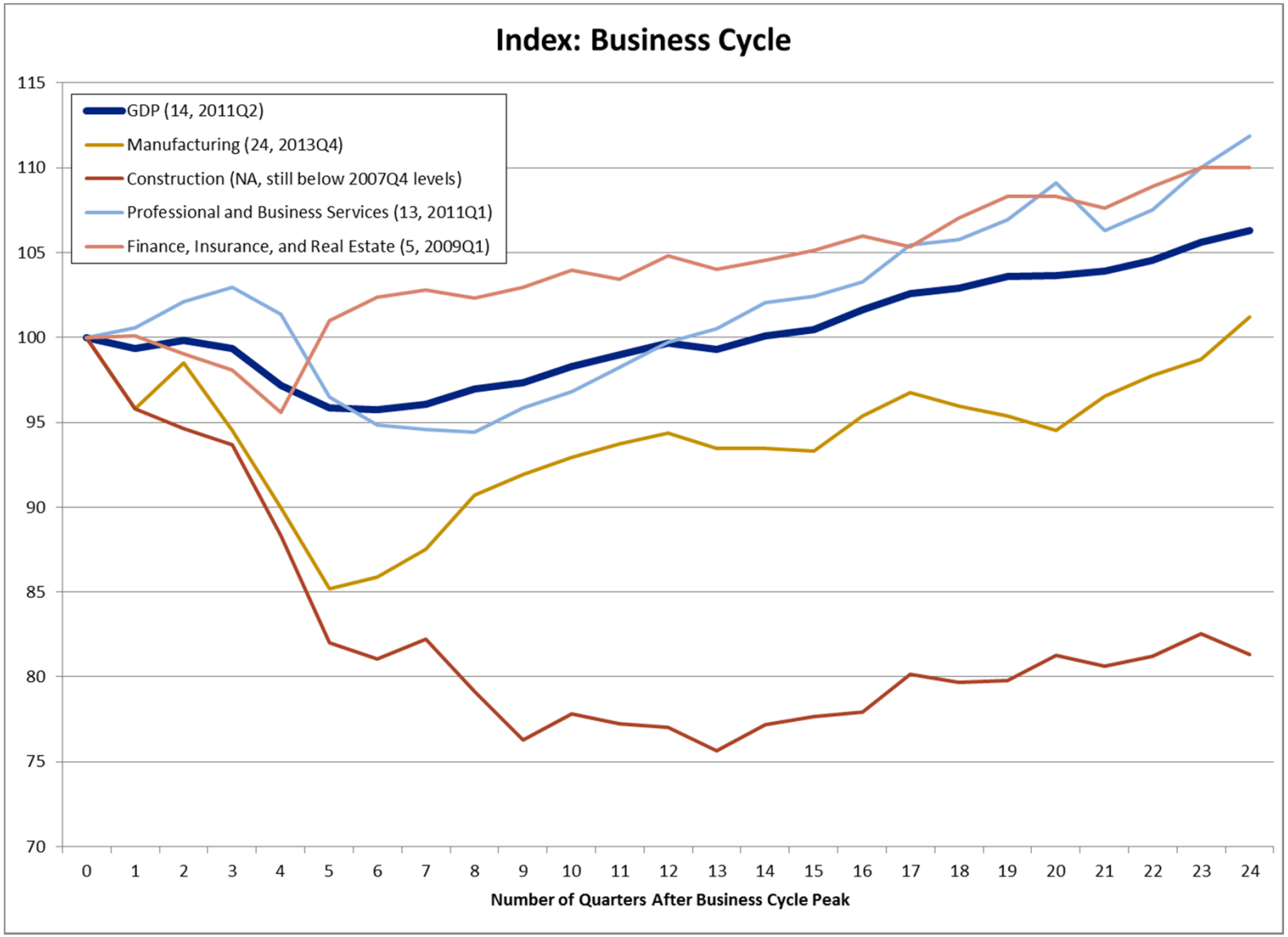
Gross output and value added for manufacturing



U.S. Producers since 2007:IV



U.S. Producers since 2007:IV—cont.



Future directions for quarterly statistics

- Expand industry detail from 22 to 69
- Accelerate release to coincide with 3rd estimate of U.S. GDP

- Longer run:
  - "Advance" release of GDP by industry?
  - A 3rd, "production" measure of GDP?

Future directions for the Industry Accounts

- What's the appropriate direction given tradeoffs among these initiatives? Why?
  - Integrated Industry Economic Accounts
    - Benchmarked GDI, statistics by LFO
  - Satellite Accounts
    - Health, SBA, Energy, FGP, ICT
  - Integrated GDP & Productivity Account
    - Historical accounts; statistics by LFO
  - Quarterly GDP by industry
    - Coincident "Advance" release
    - 3rd Measure of GDP via "production" approach