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Stumbling into the Great Recession: How and Why GDP Estimates Kept Economists and Policymakers in the Dark

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Today marks a major milestone in the availability of tools to track the workings of the U.S. economy. This morning, the U.S. Bureau of Economic Analysis (BEA) released the first official quarterly estimates of Gross Domestic Product (GDP) by industry, stretching from the fourth quarter of 2013 back to the first quarter of 2005.¹

While quarterly changes in aggregate GDP tell economic policymakers how the economy is doing in near real-time, quarterly GDP-by-industry will “provide more timely information on the accelerations, decelerations, and turning points in economic growth at the industry level.”² More clearly identifying troubled sectors can guide more targeted and more effective responses.

The new data suggest that federal economic policymakers would have benefited from the availability of quarterly GDP-by-industry data at the onset of the Great Recession (Table 1). The numbers show the substantial declines in particular sectors in 2008 and early 2009—including in construction, manufacturing, wholesale and retail trade, transportation, finance and insurance, and accommodation and food services.

BEA can produce quarterly GDP-by-industry today because in March 2009 Congress gave the Census Bureau \$8.1 million in additional annual funding to initiate new quarterly and annual surveys of establishments in finance, insurance, real estate, education, utilities, truck transportation, and ambulatory healthcare. Before 2009, the Census Bureau covered these sectors only every five years through the Economic Census. While the nation’s services industries accounted for 55 percent of the nation’s GDP, the Census Bureau collected data on a quarterly basis from sectors representing less than one third of services activity (17 percent of GDP) and on an annual basis from sectors representing a little over half of services activity (30

¹ Bureau of Economic Analysis, [“New Quarterly Statistics Detail Industries’ Economic Performance: Statistics Span First Quarter of 2005 through Fourth Quarter of 2013 and Annual Results for 2013,”](#) April 25, 2014.

² Bureau of Economic Analysis, [“Note on the December 2012 Update of Prototype, Quarterly GDP by Industry Statistics.”](#)

Table 1: Percent Changes in Chain-Type Quantity Indexes for Value Added by Industry, 2007Q1-2009Q4
 [Percent change] Seasonally adjusted at annual rates

Line		2007				2008				2009			
		I	II	III	IV	I	II	III	IV	I	II	III	IV
1	Gross domestic product	0.3	3.1	2.7	1.5	-2.7	2.0	-2.0	-8.3	-5.4	-0.4	1.3	3.9
2	Private industries	0.4	2.6	2.4	0.9	-3.3	1.2	-3.2	-9.3	-5.5	-0.6	1.7	3.5
3	Agriculture, forestry, fishing, and hunting	-14.3	-14.9	-20.3	17.1	44.2	-16.9	-11.2	62.7	4.1	2.0	57.0	-17.6
4	Mining	4.0	13.8	-11.3	-9.9	-14.1	-6.1	27.5	131.6	21.0	-31.6	-11.5	-11.4
5	Utilities	-4.3	15.3	-3.8	7.8	-0.2	24.1	-2.4	-45.4	-3.8	11.0	12.1	22.4
6	Construction	-0.1	6.2	-4.4	-8.1	-15.7	-4.8	-3.9	-21.0	-25.6	-4.5	5.7	-14.0
7	Manufacturing	-2.5	6.5	8.6	-0.1	-15.8	11.7	-15.2	-18.0	-19.6	3.4	7.8	15.3
8	Durable goods	-0.8	9.5	10.2	0.8	-4.4	0.0	-4.6	-23.0	-31.6	-10.9	2.0	15.0
9	Nondurable goods	-4.8	2.9	6.8	-0.9	-27.9	27.7	-26.5	-11.7	-3.2	21.5	14.4	15.7
10	Wholesale trade	1.1	9.8	1.7	5.9	-1.3	-2.5	-7.8	-17.9	-24.1	-12.8	-1.4	14.3
11	Retail trade	-5.9	-8.5	2.9	2.2	-8.0	-4.4	-5.0	-11.6	0.1	-0.4	-0.2	7.9
12	Transportation and warehousing	-11.1	14.3	-8.8	22.3	-0.9	-5.7	-1.4	-25.1	-21.2	14.7	4.3	8.1
13	Information	10.3	11.6	15.4	12.7	-1.0	8.1	-0.6	-21.1	-4.6	1.7	1.8	14.8
14	Finance, insurance, real estate, rental, and leasing	4.7	-0.4	-0.3	-9.1	0.3	-4.0	-3.9	-9.7	24.6	5.6	1.7	-1.8
15	Finance and insurance	4.6	-8.4	-11.0	-21.7	8.9	-21.9	-18.1	-32.2	123.9	34.3	7.0	-5.7
16	Real estate and rental and leasing	4.7	4.7	6.4	-1.4	-3.9	6.9	3.5	1.8	-4.2	-6.8	-1.3	0.2
17	Professional and business services	2.2	0.4	9.1	8.6	2.3	6.3	3.4	-6.0	-18.1	-6.5	-1.2	-0.7
18	Professional, scientific, and technical services	1.5	-0.5	12.1	12.6	7.8	7.7	4.6	-4.4	-14.6	-9.7	-3.7	-3.1
19	Management of companies and enterprises	3.5	-10.0	-1.9	0.8	-4.1	7.6	3.9	-5.7	-36.1	6.6	10.3	2.6
20	Administrative and waste management services	2.7	9.3	9.5	4.9	-5.6	2.1	0.3	-10.1	-14.1	-5.5	-1.9	3.1
21	Educational services, health care, and social assistance	-1.9	1.5	3.3	5.3	8.3	5.1	5.7	3.3	1.4	1.3	-1.2	2.4
22	Educational services	2.0	2.4	4.2	3.4	4.0	4.7	8.4	0.4	15.4	-1.8	-0.6	2.2
23	Health care and social assistance	-2.5	1.3	3.1	5.6	9.0	5.2	5.3	3.7	-0.6	1.8	-1.3	2.4
24	Arts, entertainment, recreation, accommodation, and food services	2.1	-2.7	-2.4	3.4	-4.3	-1.3	-5.1	-7.7	-13.4	-3.8	-2.8	3.2
25	Arts, entertainment, and recreation	2.9	-1.8	7.3	-0.8	-2.7	-1.5	-2.2	1.7	-11.3	-0.3	-2.6	0.9
26	Accommodation and food services	1.8	-3.0	-5.5	4.8	-4.9	-1.3	-6.1	-10.9	-14.2	-5.0	-2.9	4.1
27	Other services, except government	-2.9	-3.5	-2.1	-2.1	-5.4	-4.4	-2.7	-3.0	-9.8	-3.6	-5.6	-2.0
28	Government	0.3	0.9	1.5	2.6	2.5	1.4	2.5	-1.5	-0.4	2.4	0.3	1.0
29	Federal	-0.2	-0.5	3.4	1.4	3.2	2.9	4.6	2.2	1.7	5.8	1.7	1.9
30	State and local	0.5	1.5	0.6	3.2	2.2	0.7	1.5	-3.1	-1.4	0.8	-0.4	0.5
31	Addenda:												
32	Private goods-producing industries/1/	-1.8	6.1	1.7	-2.4	-13.2	3.6	-7.9	-3.9	-16.4	-3.0	7.0	3.5
33	Private services-producing industries/2/	1.2	1.6	2.6	2.0	0.0	0.5	-1.6	-10.9	-2.0	0.1	0.3	3.4

Legend / Footnotes:

1. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

2. Consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance, insurance, real estate, rental, and leasing; professional and business services; educational services,

Source: Bureau of Economic Analysis

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percent of GDP).³ With its new infusion of money, the Census Bureau’s quarterly collection effort now covers the entire services sector, which allows BEA to produce quarterly GDP estimates by industry.

Lack of regularly updated services industries data prior to 2009 also had implications for the reliability of the aggregate quarterly GDP measure, the primary indicator used by the White House, the Federal Reserve, the Treasury Department, and Congress to guide macroeconomic policy in the near term. In normal economic times, BEA could produce relatively reliable aggregate quarterly GDP estimates by making educated estimates about services sectors not covered by surveys on the basis of historical patterns and less-than-official sources of information.

Six years ago, BEA Director Steven Landefeld and co-authors summarized the process:

In the United States, the GDP and the national accounts estimates are fundamentally based on detailed economic census data and other information that is available only once every five years. The challenge lies in developing a framework and methods that take these economic census data and combine them using a mosaic of monthly, quarterly, and annual economic indicators to produce quarterly and annual GDP estimates. . . .

[S]ome data are simply not available for the earlier estimates. For the initial monthly estimates of quarterly GDP, data on about 25 percent of GDP—especially in the service sector—are not available, and so these sectors of the economy are estimated based on past trends and whatever related data are available.⁴

However, in turbulent times such as 2008, the agency’s capacity to overcome the absence of services data declined dramatically, as seen in Table 2.

As one result, the erroneous January 2009 prediction by Christina Romer and Jared Bernstein, President-elect Obama’s top economic advisers, that the passage of a Recovery Plan of “slightly over \$775 billion” would keep the national unemployment rate below 8 percent was based on the overly optimistic GDP data available at the time. At the time, the latest available GDP estimates were a 1.0 percent annual rate of growth in the first quarter of 2008 (2008Q1), a 2.8 percent annual growth rate in 2008Q2, and a 0.5 percent annual rate of decline in 2008Q3. By 2011, BEA had revised these numbers to minus 1.8 percent, plus 1.3 percent, and minus 3.7 percent, respectively.

³ Mark Wallace, [“Service Statistics Improvements by the U.S. Census Bureau: What Have We Done and Plans for the Future.”](#) presented at the Measuring and Enhancing Services Trade Data and Information Conference, Washington, DC, September 14, 2010. The Census Bureau has long gathered quarterly data from goods industries, a legacy of the long-time centrality of manufacturing in the U.S. economy.

⁴ J. Steven Landefeld, Eugene P. Seskin, and Barbara M. Fraumeni, “Taking the Pulse of the Economy: Measuring GDP,” *Journal of Economic Perspectives*, Volume 22, Number 2 (Spring 2008), pp. 193–216.

By the time Congress passed the Recovery Act in February 2009 (\$787 billion initial estimate), BEA had issued another, relatively dire GDP number, an annual rate of decline in 2008Q4 of minus 3.8 percent. By 2011, BEA revised that figure to minus 8.9 percent.

Table 2: Annual Percent Change in Quarterly Estimates of Real GDP
2008Q1-2009Q2

Quarter	Annual Rate of Change			
	Advance	Final	Latest	Latest minus Final
2008Q1	0.6	1.0	-1.8	-2.8
2008Q2	1.9	2.8	1.3	-1.5
2008Q3	-0.3	-0.5	-3.7	-3.2
2008Q4	-3.8	-6.3	-8.9	-2.6
2009Q1	-6.1	-5.5	-5.3	+0.2
2009Q2	-1.0	-0.7	-0.3	+0.4

Figures in orange were available to Romer and Bernstein on January 10, 2009. Figures in orange and green were available to Congress when it passed the Recovery Act on February 13, 2009.

Note: The advance estimate is provided 30 days after the quarter's end. The final estimate is given 90 days after the quarter's end. (Since this period, BEA has renamed the "final estimate" as the "third estimate.")

Sources: Brent Moulton and Dennis Fixler, "Enhancing Public Understanding of Revisions to Preliminary Estimates: The U.S. Post-Recession Perspective on Revisions," Bureau of Economic Analysis, presented at the IARIW annual conference, Boston, MA, August 8, 2012. Final estimates are from BEA news releases. The latest estimates for 2008Q1-Q4 are from Eugene P. Seskin and Shelly Smith, "Annual Revision of the National Income and Product Accounts," *Survey of Current Business*, August 2011, Table 6, p. 12. The latest estimates for 2009Q1-Q2 are from Eugene P. Seskin and Alyssa E. Holdren, "Annual Revision of the National Income and Product Accounts," *Survey of Current Business*, August 2012, Table 6, p. 14.

Concomitant with the recent fifth-year anniversary of the Recovery Act's enactment, the Federal Reserve released the transcripts of Federal Open Market Committee meetings and calls throughout 2008.⁵ The title of the *New York Times* article analyzing these conversations gets to the point: "Fed Misread Crisis in 2008, Records Show." The article begins:

On the morning after Lehman Brothers filed for bankruptcy in 2008, most Federal Reserve officials still believed that the American economy would keep growing despite the metastasizing financial crisis. . . . The hundreds of pages of transcripts, based on recordings made at the time, reveal the ignorance of Fed officials about economic conditions during the climactic months of the financial crisis. Officials

⁵ ["FOMC: Transcripts and Other Historical Materials, 2008,"](#) Board of Governors of the Federal Reserve System webpage.

repeatedly fretted about overstimulating the economy, only to realize time and again that they needed to redouble efforts to contain the crisis.⁶

BEA very much understood the nature of the problem. In the agency's congressional budget requests for FY2011-FY2013, it made some variation of this unusual admission:

The federal economic statistical system – charged with providing key actionable intelligence on the status, trends, and dynamics of the American economy – fell short in providing the advanced warning signs of a building economic crisis. In no small part, this shortcoming was due to an inability to see, both at the detailed and aggregate levels, warning signs of systematic risk. This was not a result of a lack of attention, competence, or focus, but rather the exceptional tempo of change and evolution occurring in the economy and the existing statistical system's inability to keep pace.⁷

This discussion suggests that the lack of frequent Census survey coverage of multiple services industries possibly had a substantial negative impact on the efficacy of federal macroeconomic policy. A reasonable question is: To what extent was Congress given the opportunity to fund the Census annual and quarterly services surveys prior to 2009?

The short answer is a number of times. Here's a chronology:

- In 1986, the Joint Economic Committee held hearings on the inadequate state of federal economic statistics, particularly with regard to GDP estimates, and more particularly regarding the need to expand regular data collection beyond manufacturing in light of the increasing services orientation of the U.S. economy.⁸
- In 1989, Council of Economic Advisers Chair Michael Boskin organized an interagency working group to develop recommendations for an Economic Statistics Initiative. Recommendations were issued in 1990 and 1991 and incorporated into the president's FY1991 and FY1992 budget requests. These included a request that the Census Bureau receive funding to survey firms in the full range of services industries on an annual basis.⁹
- A review of annual budget requests indicates that Presidents George H.W. Bush and Bill Clinton asked Congress seven times to expand funding for the Services Annual Survey (budget requests for FY1991 through FY1997). While Congress approved a modest expansion early on, for the most part it turned these requests down.
- After a five-year hiatus, President George W. Bush asked Congress six times to expand Services Annual Survey funding and provide for a new Quarterly Services

⁶ Binyamin Appelbaum, [“Fed Misread Crisis in 2008, Records Show,”](#) *New York Times*, February 21, 2014.

⁷ U.S. Department of Commerce, Economics and Statistics Administration, [“Economic and Statistical Analysis Budget: Budget Estimates, Fiscal Year 2013,”](#) p. ESA-36.

⁸ “The Quality of the Nation's Economic Statistics: Hearings before the Joint Economic Committee, Congress of the United States,” March 17 and April 17, 1986.

⁹ “Improving the Quality of Economic Statistics: The 1992 Economic Statistics Initiative,” *Survey of Current Business*, March 1991, p. 4.

Survey (FY2003-2006 and FY2008-2009). In expectation that Congress would approve the initial requests, the BEA strategic plan at the time expected the agency to produce the first set of quarterly GDP-by-industry estimates in FY2008.¹⁰ However, while Congress approved another modest expansion for FY2003, it turned down subsequent requests until consideration of FY2009 appropriations.

With congressional approval of the new funds, the Census Bureau quickly moved to field the new surveys. The Quarterly Services Survey had a phased expansion over seven quarters (2009Q2 to 2010Q4). The Services Annual Survey fully expanded for the 2009 report.

The availability of new quarterly and annual services data immediately allowed BEA to increase the reliability of its quarterly estimates of total GDP. Also, the surveys' expansion of coverage to include all services industries as of 2011 gave BEA the foundation for producing quarterly GDP-by-industry estimates across the entire economy. And it did so today, six years after the original target date. But not as quickly as it might have, given that the Census Bureau had fully expanded coverage three years ago.

After Congress appropriated funds for the full Quarterly Services Survey, BEA made an FY2011 budget request for a small amount of funds to create the quarterly GDP-by-industry series:

The new quarterly industry statistics will include inflation-adjusted measures of GDP-by-Industry and industry contributions to overall U.S. economic growth and inflation. They will provide an early tool to evaluate the economic performance of U.S. industries, including:

- Which industries are driving U.S. economic growth or contraction.
- Which industries are contributing to growth over the business cycle.
- What is the impact of specific policy changes on specific industries on a quarterly basis.

Most importantly, adding GDP-by-Industry statistics on a quarterly basis brings this critically informative statistic on the health and stability of each industry sector into near real-time. The ability to identify, in near real-time, fluctuations across sectors will provide for a far more comprehensive ability to understand and target responses to a given sector's economic health.

Finally, the ability to improve the coverage and timeliness of industry statistics is a direct result of Congress's funding, in FY09, of the new annual and quarterly service sector surveys conducted by the Census Bureau. Bringing Quarterly GDP-by-Industry statistics online is one of the primary goals and benefits of that funding.¹¹

BEA's FY2011 request was part of a multi-faceted Economic Dashboard initiative (\$5.2 million). Congress did not approve this request or a similar one for FY2012. For FY2013, BEA asked for an annual appropriation of \$500,000 for the quarterly GDP-by-industry series alone. Although the

¹⁰ U.S. Bureau of Economic Analysis, "Strategic Plan for FY 2004–FY 2008," p. 12.

¹¹ U.S. Department of Commerce, Economics and Statistics Administration, "[Economic and Statistical Analysis Budget: Budget Estimates, Fiscal Year 2011](#)," p. ESA-60-61.

House initially did not approve the requested funding, support from the Senate Appropriations Committee led to inclusion of funding in the final bill passed by both houses in March 2013.

The new quarterly GDP-by-industry series disaggregates the economy into 22 sectors and comes out 120 days after each quarter. The path from the Joint Economic Committee hearings and the Boskin report is not quite done. In a year or so, quarterly GDP-by-industry will disaggregate the economy into 69 sectors and be released 90 days after each quarter.

Two next steps are suggested in light of the above discussion. The first is to better understand the consequences of inaccurate quarterly aggregate GDP and unavailable quarterly GDP-by-industry on macroeconomic policymaking in the 2008-2009 period. It would be useful to hear from the principals involved what, if anything, might have been said and done differently if reliable quarterly total and industry-level GDP estimates had been available then.

The second recommended step is for the Joint Economic Committee to examine the dynamics within Congress that led to the absence of good data and to provide guidance to House and Senate appropriations and oversight committees on how they might ensure that congressional stewardship of the nation's economic statistical system is much improved.

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