



Visualizing GDP: An Inside Look at the Q3 Advance Estimate

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of Advisor Perspectives

Note: The charts in this commentary have been updated to include the Q3 2017 Advance Estimate released Friday.

The chart below is a way to visualize real GDP change since 2007. It uses a stacked column chart to segment the four major components of GDP with a dashed line overlay to show the sum of the four, which is real GDP itself. Here is the latest overview from the Bureau of Labor Statistics:

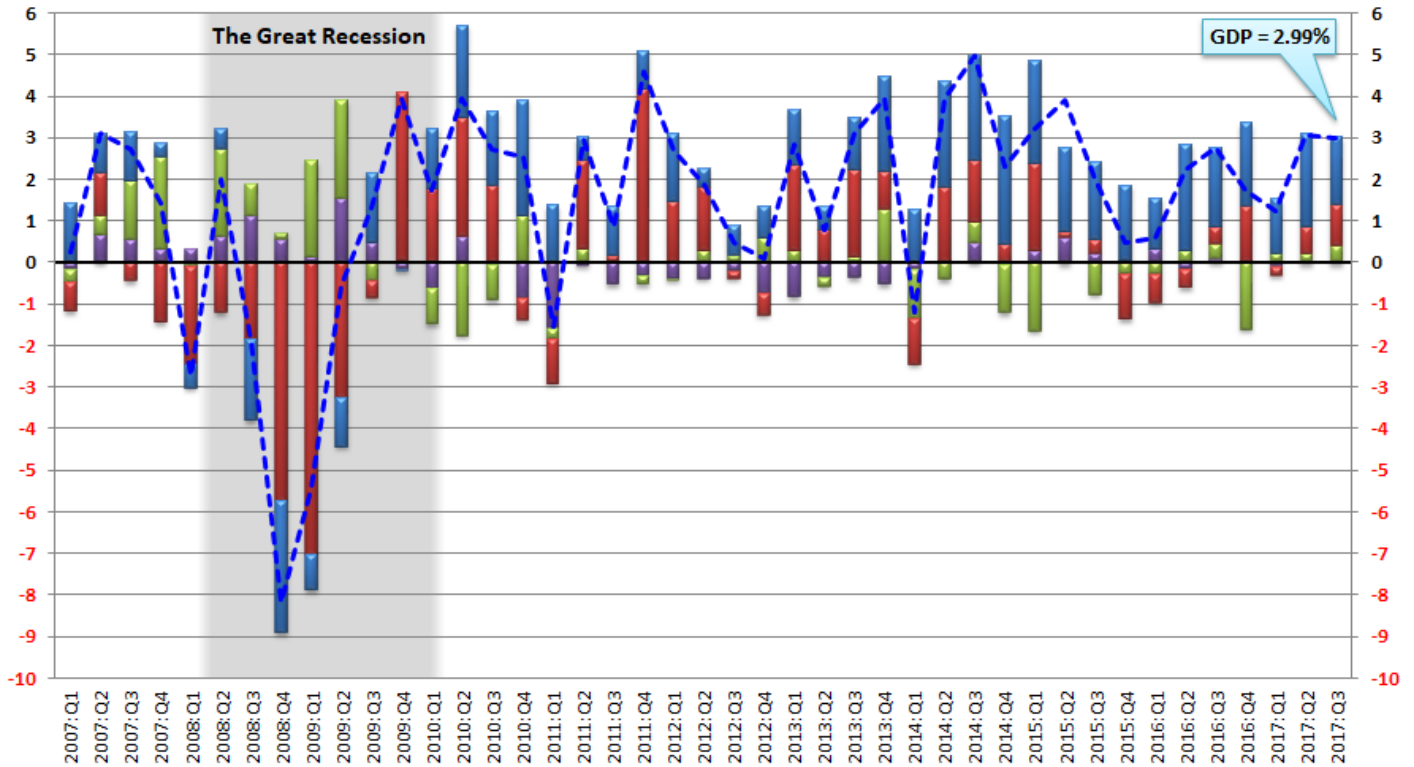
Real gross domestic product (GDP) increased at an annual rate of 3.0 percent in the third quarter of 2017 (table 1), according to the "advance" estimate released by the Bureau of Economic Analysis. In the second quarter, real GDP increased 3.1 percent.

The increase in real GDP in the third quarter reflected positive contributions from personal consumption expenditures (PCE), private inventory investment, nonresidential fixed investment, exports, and federal government spending. These increases were partly offset by negative contributions from residential fixed investment and state and local government spending. Imports, which are a subtraction in the calculation of GDP, decreased (table 2). [more here]

Let's take a closer look at the contributions of GDP of the four major subcomponents. The data source for this chart is the Excel file accompanying the BEA's latest [GDP news release](#) (see the links in the right column). Specifically, it uses Table 2: Contributions to Percent Change in Real Gross Domestic Product.

- Personal consumption expenditures
- Gross private domestic investment
- Net exports of goods and services
- Government consumption expenditures and gross investment
- - - Real GDP Sum of above

Data Through 2017
Q3 Advance Estimate



Note: The conventional practice is to round GDP to one decimal place, the latest at 3.0%. The GDP in the chart above is the real GDP calculated to two decimal places.

Here is a chart of the latest quarterly estimates.

Over the time frame of this chart, the Personal Consumption Expenditures (PCE) component has shown the most consistent correlation with real GDP itself. When PCE has been positive, GDP has usually been positive, and vice versa. In the latest GDP data, the contribution of PCE came at 1.62 of the 2.99 real GDP, a decrease over the previous quarter and a positive contribution to Q3 GDP.

Contributions to GDP Percent Change: The Last Four Quarters				
	2016	2017	2017	2017
	Q4	Q1	Q2	Q3
Percent change at annual rate:				
Gross domestic product	1.8	1.2	3.1	3.0
Percentage points at annual rates:				
Personal consumption expenditures	1.99	1.32	2.24	1.62
Goods	1.03	0.15	1.16	0.92
Durable goods	0.67	-0.01	0.56	0.41
Nondurable goods	0.35	0.16	0.61	0.31
Services	0.97	1.17	1.08	0.70
Gross private domestic investment	1.34	-0.20	0.64	0.98
Fixed investment	0.28	1.27	0.53	0.25
Nonresidential	0.02	0.86	0.82	0.49
Structures	-0.06	0.39	0.20	-0.15
Equipment	0.10	0.24	0.48	0.47
Intellectual property products	-0.02	0.23	0.15	0.17
Residential	0.26	0.41	-0.30	-0.24
Change in private inventories	1.06	-1.46	0.12	0.73
Net exports of goods and services	-1.61	0.22	0.21	0.41
Exports	-0.47	0.85	0.42	0.28
Goods	-0.27	0.81	0.18	0.11
Services	-0.19	0.04	0.25	0.17
Imports	-1.14	-0.63	-0.22	0.12
Goods	-1.05	-0.56	-0.16	0.07
Services	-0.09	-0.07	-0.06	0.06
Government consumption expenditures	0.03	-0.11	-0.03	-0.02
Federal	-0.03	-0.16	0.13	0.08
National defense	-0.13	-0.13	0.18	0.09
Nondefense	0.10	-0.03	-0.05	-0.01
State and local	0.06	0.05	-0.16	-0.09

Gross Private Domestic Investment was a small positive contributor.

Net Exports was positive in Q3, but was a fractional contribution.

Government Consumption Expenditures came in slightly negative.

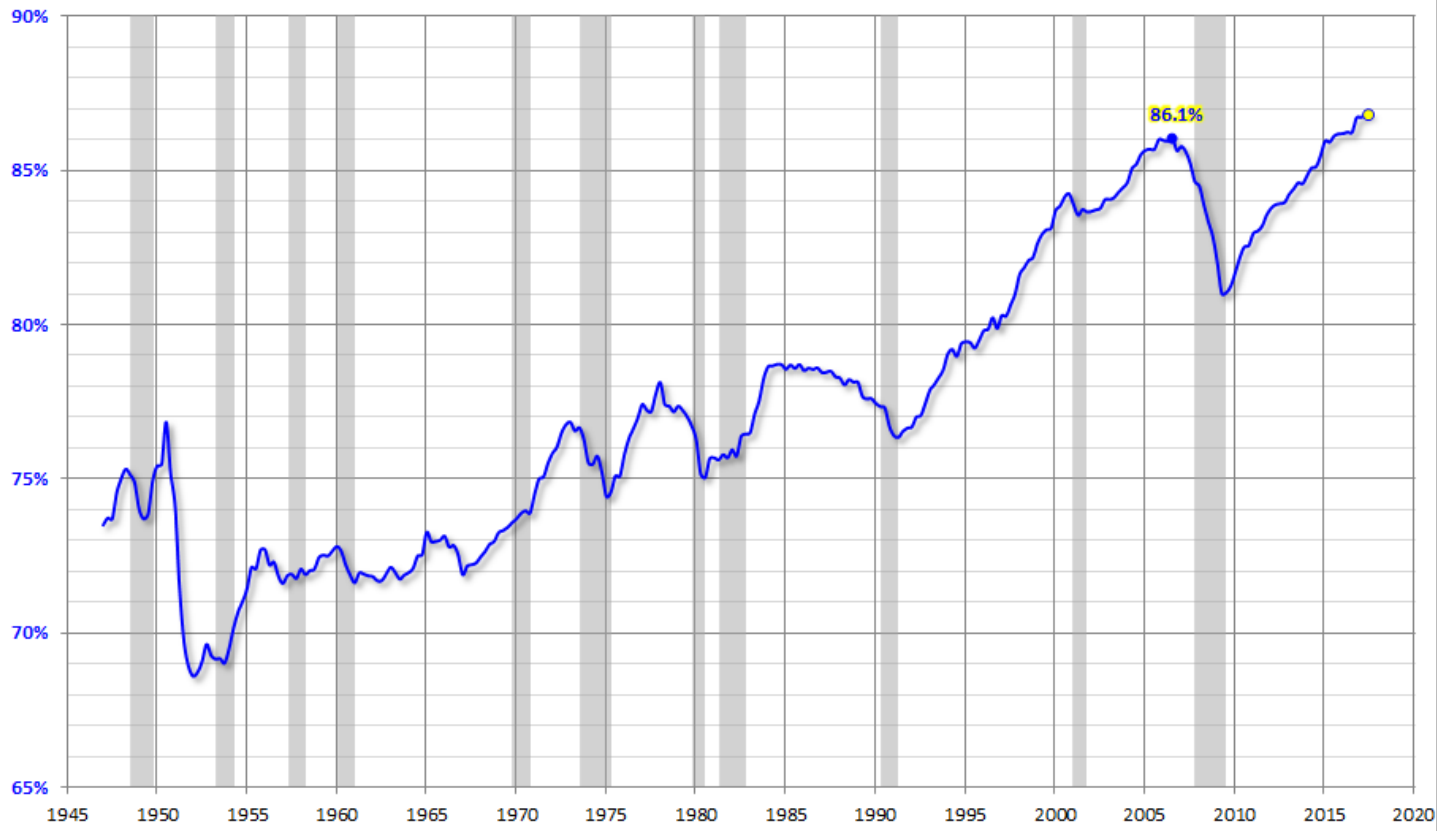
As for the role of Personal Consumption Expenditures (PCE) in GDP and how it has increased over time, here is a snapshot of the PCE-to-GDP ratio since the inception of quarterly GDP in 1947. To one decimal place, the latest ratio of 69.5% is just below its record high. From a theoretical perspective, there is a point at which personal consumption as a percent of GDP can't really go any higher. We may be approaching that upper range.

Data Through 2017
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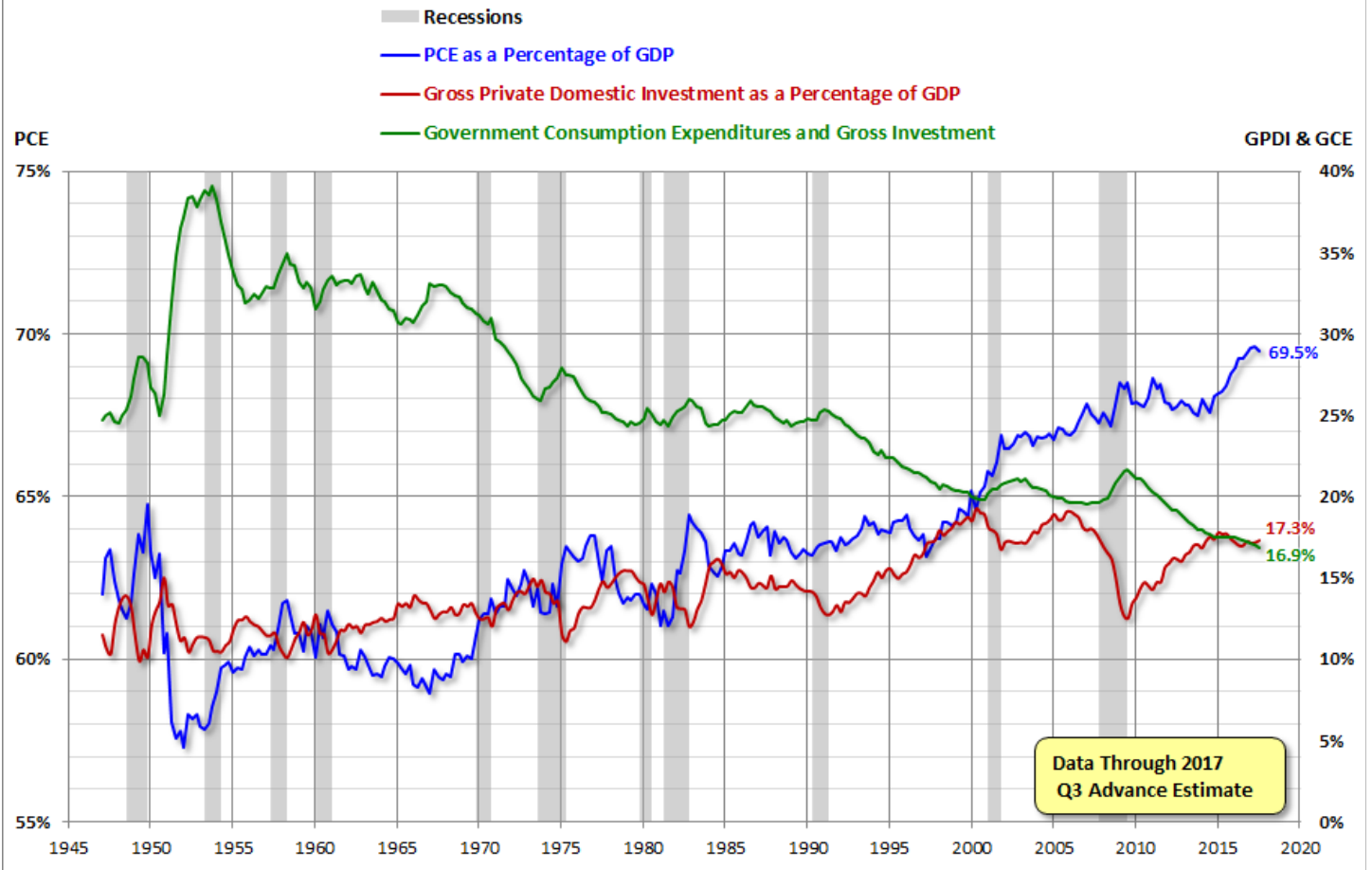
Personal Consumption Expenditures Plus Gross Private Domestic Investment as a Percent of Real GDP

Recessions Highlighted in Gray



Let's close with a look at the inverse behavior of three of the GDI components during recessions. PCE and especially GC generally increase as a percent of GDP whereas GDI declines. Note the three with different vertical axes (Personal Consumption Expenditures on the left, Gross Private Domestic Investment and Government Consumption on the right) to highlight the frequent inverse correlations.

Change in Three Components as a Percent of Real GDP



Other GDP updates:

Latest GDP Update

Real GDP Per Capita