

Residual Seasonality in GDP ... Again?

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Federal Reserve Board

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The views expressed herein are those of the authors and not necessarily those of other members of the Federal Reserve System.

Update from BEA in August 2016

Survey of Current Business

“the seasonal adjustment of several series used to calculate gross domestic product (GDP) that exhibited seasonality but that had not previously been adjusted—began with the release of the July 2015 annual revision of the NIPAs, which included the seasonal adjustment of personal consumption expenditures (PCE) services data and the adjustment of federal defense services.”

“As a result of the review, this year’s annual update introduced new or improved seasonal adjustments for state and local investment in structures and prices for select PCE services and private fixed investment components. And like every annual update, BEA incorporated updated seasonal factors for the open time span—from **the first quarter of 2013 to the first quarter of 2016.**”

Sounds like progress ... so how did 2017:Q1 go?

G.D.P. Report Shows U.S. Economy Off to Slow Start in 2017

The initial weakness this year does follow a pattern of sluggish annual start since the recovery began, when momentum has picked up in subsequent quarters.[Link](#)



Betsey Stevenson [Link](#)

@BetseyStevenson

Two words: residual seasonality
(Plus a bunch of other reasons Q1 was 0.7 when real growth is actually roughly 2.4%)

[Residual Seasonality: The Return of an Old First-Quarter Friend?](#) [Link](#)

Lingering Residual Seasonality in GDP Growth [Link](#)

[Minutes of the Federal Open Market Committee](#) [Link](#)

March 14-15, 2017

Participants generally saw the incoming economic information as consistent, overall, with their expectations and indicated that their views about the economic outlook had changed little since the January-February FOMC meeting. Although GDP appeared to be expanding relatively slowly in the current quarter, that development seemed primarily to reflect temporary factors, possibly including residual seasonality. Participant



Ernie Tedeschi [Link](#)

@ernietedeschi

Still signs of residual seasonality in GDP. Adjusting for this, real GDP growth was 1.8% in Q1... still not gangbusters but not as bad.

Why First-Quarter Growth Is Often Weak [Link](#)

It's a recurring feature that may reflect technical problems more than underlying trends



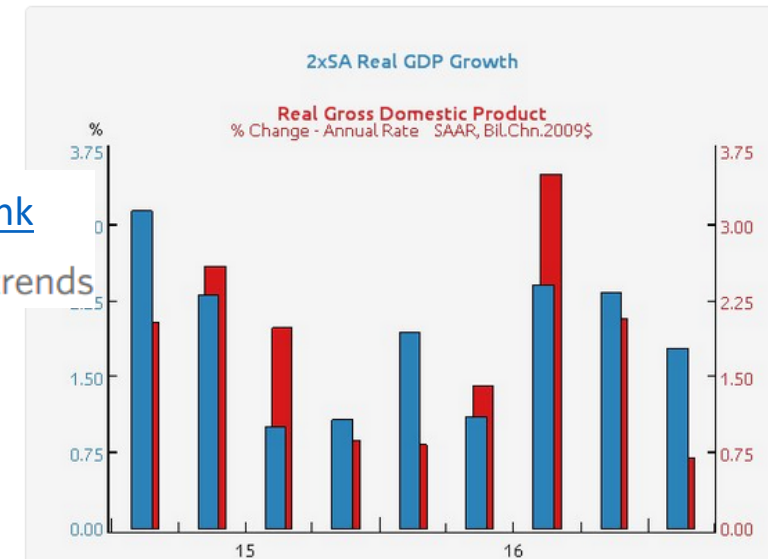
Kai Ryssdal [Link](#)

@kairyssdal

[Link](#)

Today's macroeconomic word of the day: residual seasonality.

Here's why the US economy usually stinks at the beginning of the year [Link](#)



July 28, 2017

Another Look at Residual Seasonality in GDP

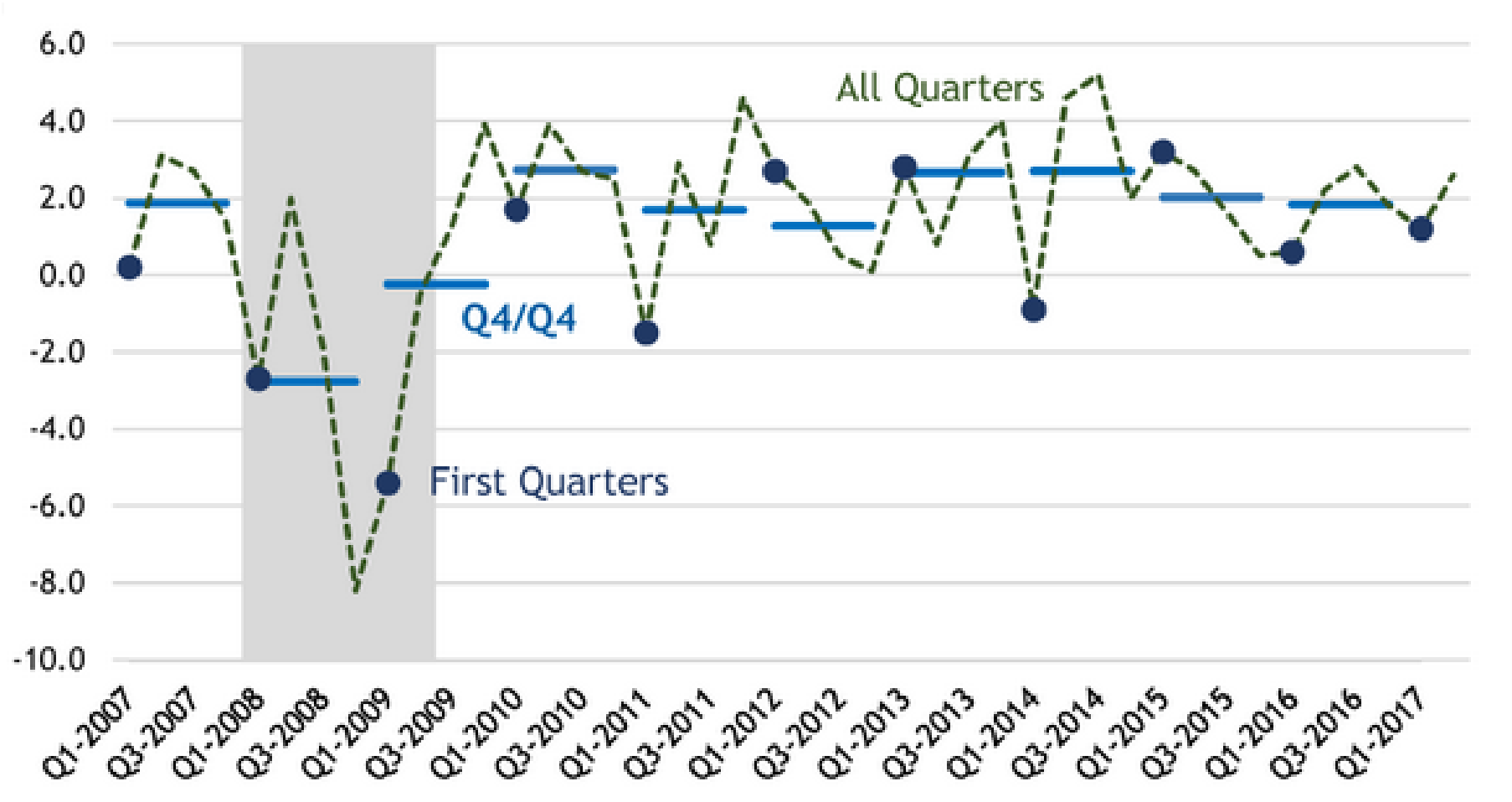
Paul Lengermann, Norman Morin, Andrew Paciorek, Eugenio Pinto, and Claudia Sahm

According to the Bureau of Economic Analysis, real GDP rose at an annual rate of 1.2 percent in the first quarter of this year, a step down from the 2.3 percent pace in the second half of last year.¹ The advance estimate for the first quarter published in April was even lower at 0.7 percent. Yet another weak first-quarter reading on GDP growth led several commentators to argue that growth continues to be understated because of a measurement problem known as "residual seasonality".² However, we argue in this note that residual seasonality is unlikely to be the primary reason for the slowdown in first-quarter growth this year.

Wrote external, follow-up to 2015 FEDS Note (Gilbert, Paciorek, Morin, and Sahm) ... after engaging in residual seasonality topic on Twitter (1,2,3) and staff work ... to explain the issue

Figure 1: Growth Often Slower in First Quarter than Year As a Whole

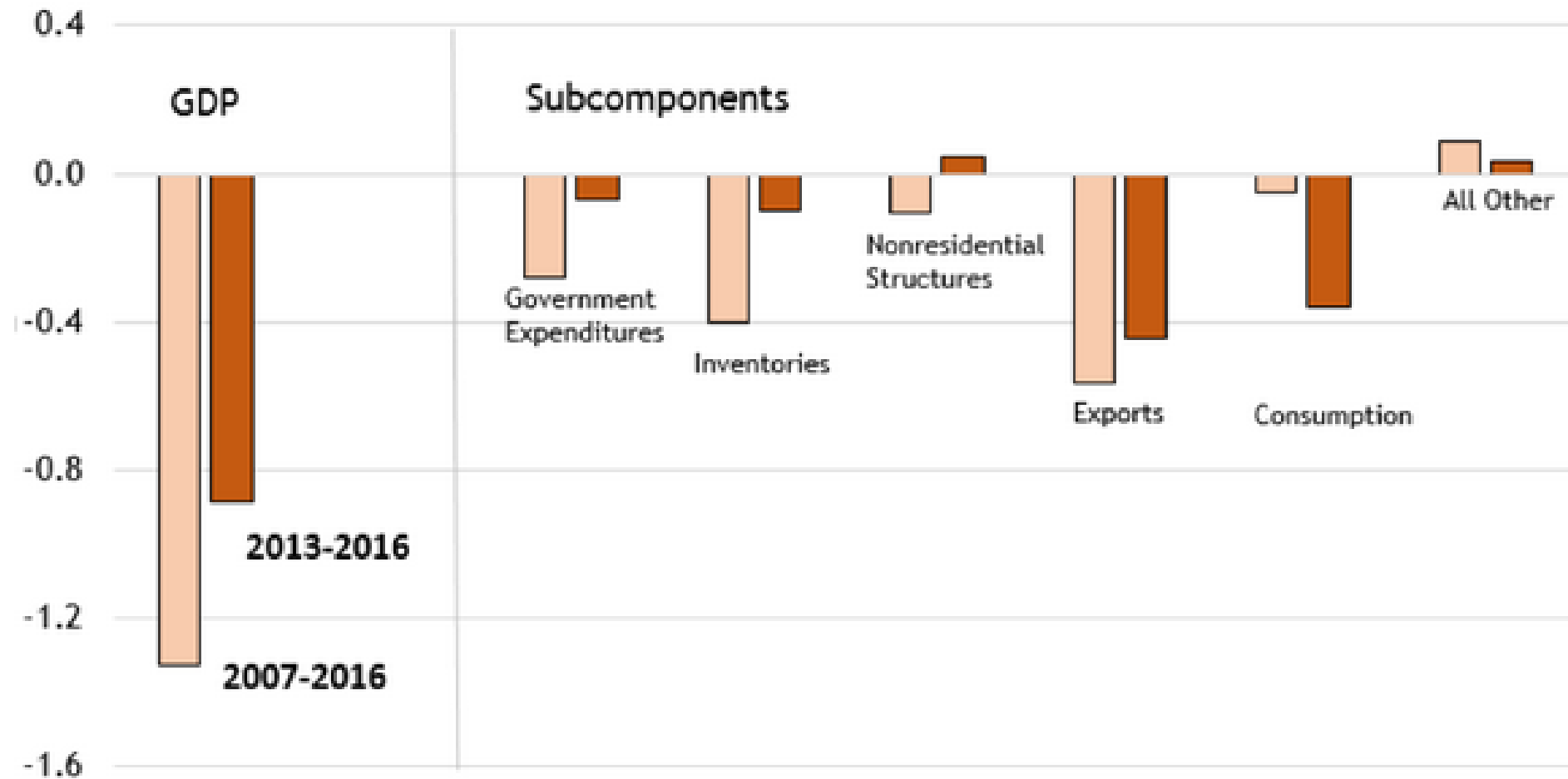
Percent Change in Real GDP, Annual Rate



Source: Bureau of Economic Analysis. Note: Horizontal bars are the percent change in fourth-quarter GDP each year relative to prior fourth quarter. Dashed line is quarterly percent change in GDP, at an annual rate, with dots denoting first quarters. Shaded area denotes recession.

Figure 2: GDP Still Weak in First Quarters After Seasonal Adjustment Changes But GDP Contributions of Subcomponents Shifted

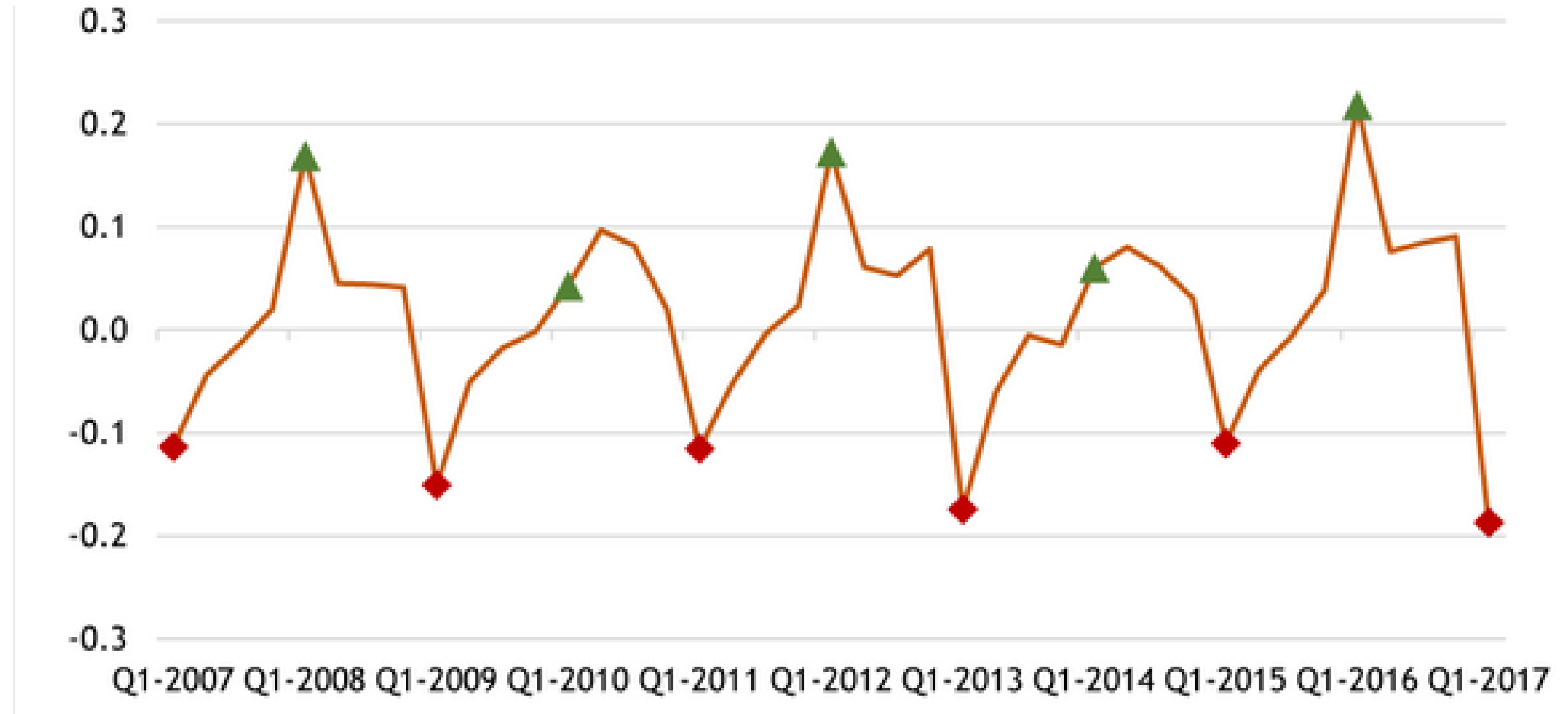
Q1 Growth minus Q4/Q4 Growth, Percentage Point, Average over Period



Source: Bureau of Economic Analysis

Figure 3: Professional Advocacy Nonprofits Reduce First-Quarter GDP Growth in Odd-Numbered Years

GDP Contribution, Percentage Point, Annual Rate



Source: Bureau of Economic Analysis. Note: Professional advocacy nonprofits includes political organizations.

Conclusions

- We do not view residual seasonality as the primary reason for the slowdown in first quarter growth this year
- BEA's new seasonal adjustment procedures seem to have addressed some prior areas of first-quarter weakness; we look forward to revisions in 2018
- First-quarter weakness in consumer spending that recently emerged raises concerns about measurement but appears largely idiosyncratic
- ‘Is a slowdown likely to reverse?’ ... is a more important question than if it is residual seasonality, unusual weather, or other idiosyncratic factors

Some Suggestions for BEA

- For high-profile adjustments, **use flexible annual revisions** and revise back more than three years
- Encourage statistical agencies, like Census Bureau, to **publish efforts** on improving seasonal adjustment
- Give experts at BEA (or other agencies) an opportunity to weigh in on best practices to **engage the narrative with expertise**
- **Revisit focus on latest quarterly GDP**, for example, average of GDP and GDI, four-quarter changes, or PDFP, see [CEA 2016](#).