

The Cyclical Sensitivity in Estimates of Potential Output





by Coibion, Gorodnichenko, and Ulate

Discussion by Valerie A. Ramey

UCSD and NBER

BPEA, September 2018

Three Goals of this Paper

1. Demonstrate that estimates of potential GDP by leading policy institutions overreact to temporary shocks and underreact to permanent shocks. 
2. Conduct exploratory research on alternative methods that solve some of the problems highlighted in (1).  
3. Provide a better estimate of current potential GDP. 

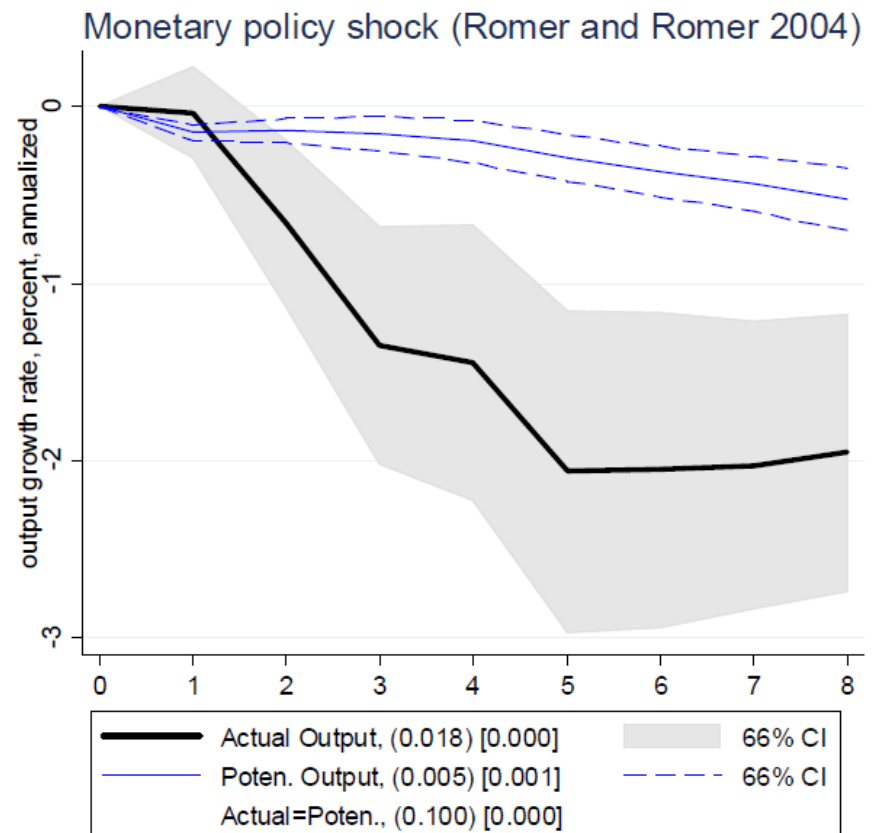
Goal 1: Demonstrate problems with current estimates

1. Impressive data collection effort.
2. Careful attention to real time issues.
3. Convincing demonstration that **estimates of potential by leading policy institutions overreact to temporary shocks and underreact to permanent shocks.**

Example: Greenbook Estimates of Potential

1. They show that the Greenbook forecasts of potential are virtually indistinguishable from an HP trend.

2. They show that Greenbook estimates of potential treat monetary shocks as having permanent effects.



Goal 2

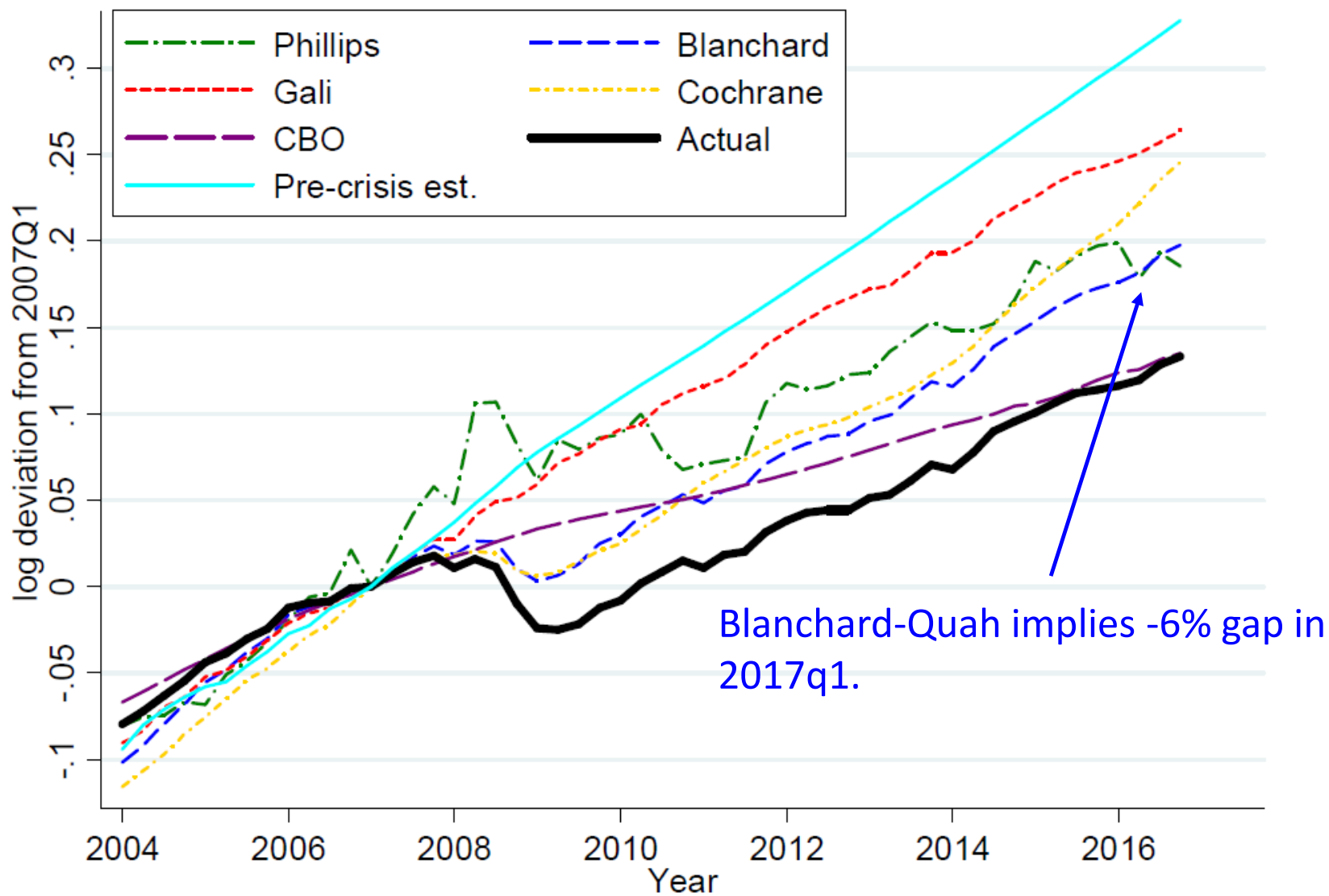
2. Conduct exploratory research on alternative methods that solve some of the problems highlighted in (1).

Alternative Methods

They consider methods that try to differentiate transitory from permanent shocks.

1. **Blanchard and Quah** (1989): Only supply shocks should have permanent effect on GDP, identify with long-run restrictions.
2. **Gali** (1999): Only technology shocks should have permanent effect on GDP, identify with long-run restrictions
3. **Cochrane** (1994): Consumption should respond only to permanent changes in income, use consumption to decompose transitory from permanent.
4. **Phillips Curve**: Estimate Phillips curve model to infer potential output from inflation dynamics.

Fig. 13 *Panel D: Combined Estimates*



Comparisons of CBO and Blanchard-Quah

1. Revisions downward from 2007 to 2017.

Their abstract says that the alternative approaches “suggest a much more limited decline in potential output following the Great Recession.”

But according to my calculations with their data, from 2007 to 2017, the estimate of log potential GDP in 2017q1 declines by:

- 0.11 for CBO.
- 0.13 for their implementation of Blanchard-Quah

Thus, even though the Blanchard-Quah method estimate only incorporates permanent shocks to GDP, **it implies a slightly greater revision downward of potential GDP in these 10 years.**

Comparisons of CBO and Blanchard-Quah

2. Implied Output Gaps

$Y = \log \text{ actual GDP}, \quad Y^* = \log \text{ potential GDP}$

Define gap as: $Y - Y^*$

So, the gap should be negative in a recession.

I updated CGU Blanchard-Quah to 2018q2, using same programs, and same rolling window over the last 30 years. The most recent gaps are:

CBO: 0.5%

BQ: -7.0%

3. Implications for the natural rate of unemployment

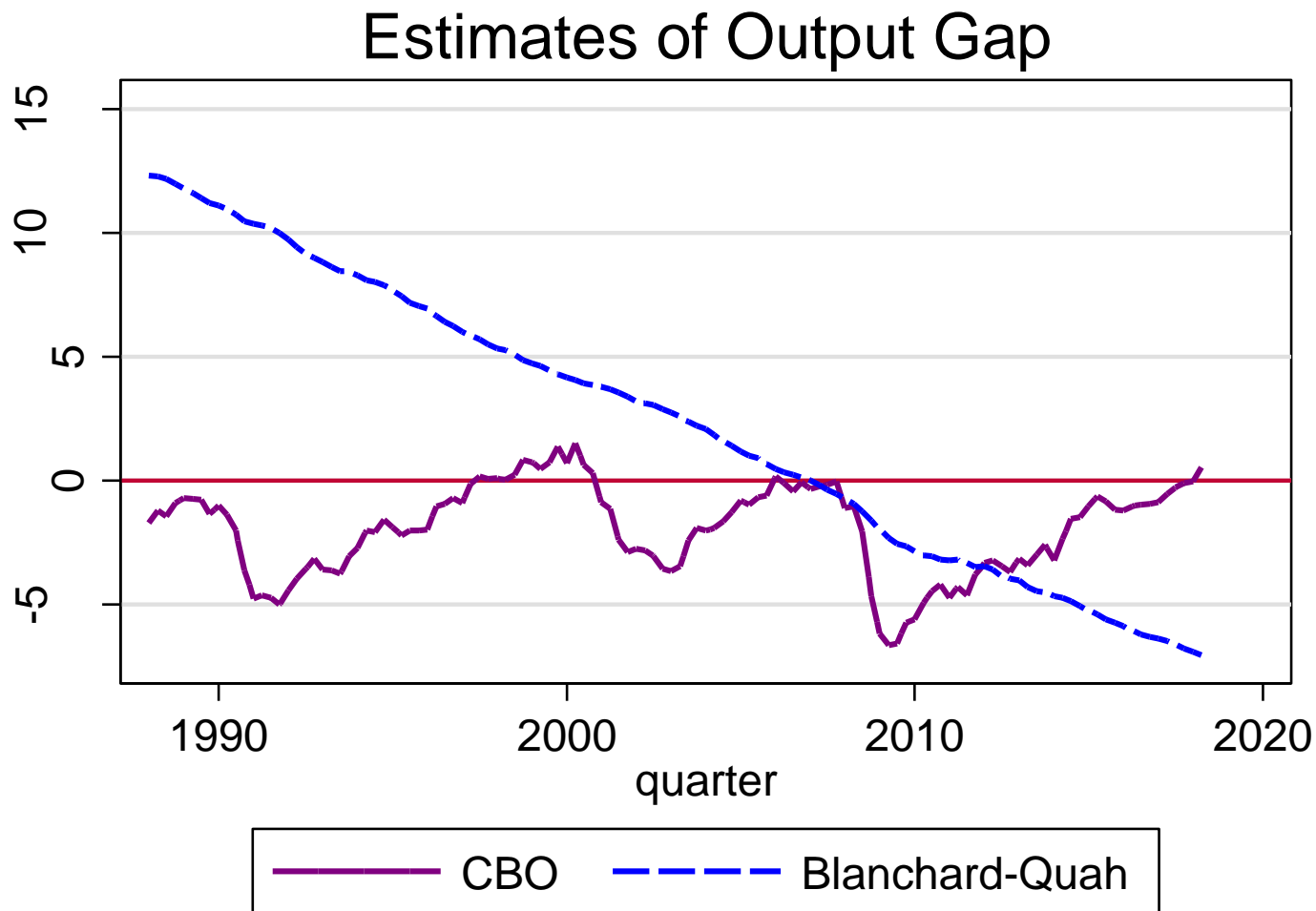
$Y - Y^* = -2 (U - U^*)$ Okun's Law (From Ball et al. "Fit at 50")

2018q2 $U = 3.9\%$

CBO output gap implies $U^* = 4.2\%$

BQ output gap implies $U^* = 0.4\% !!!$

BQ gap over the 30-year estimation window



Something funny is going on.

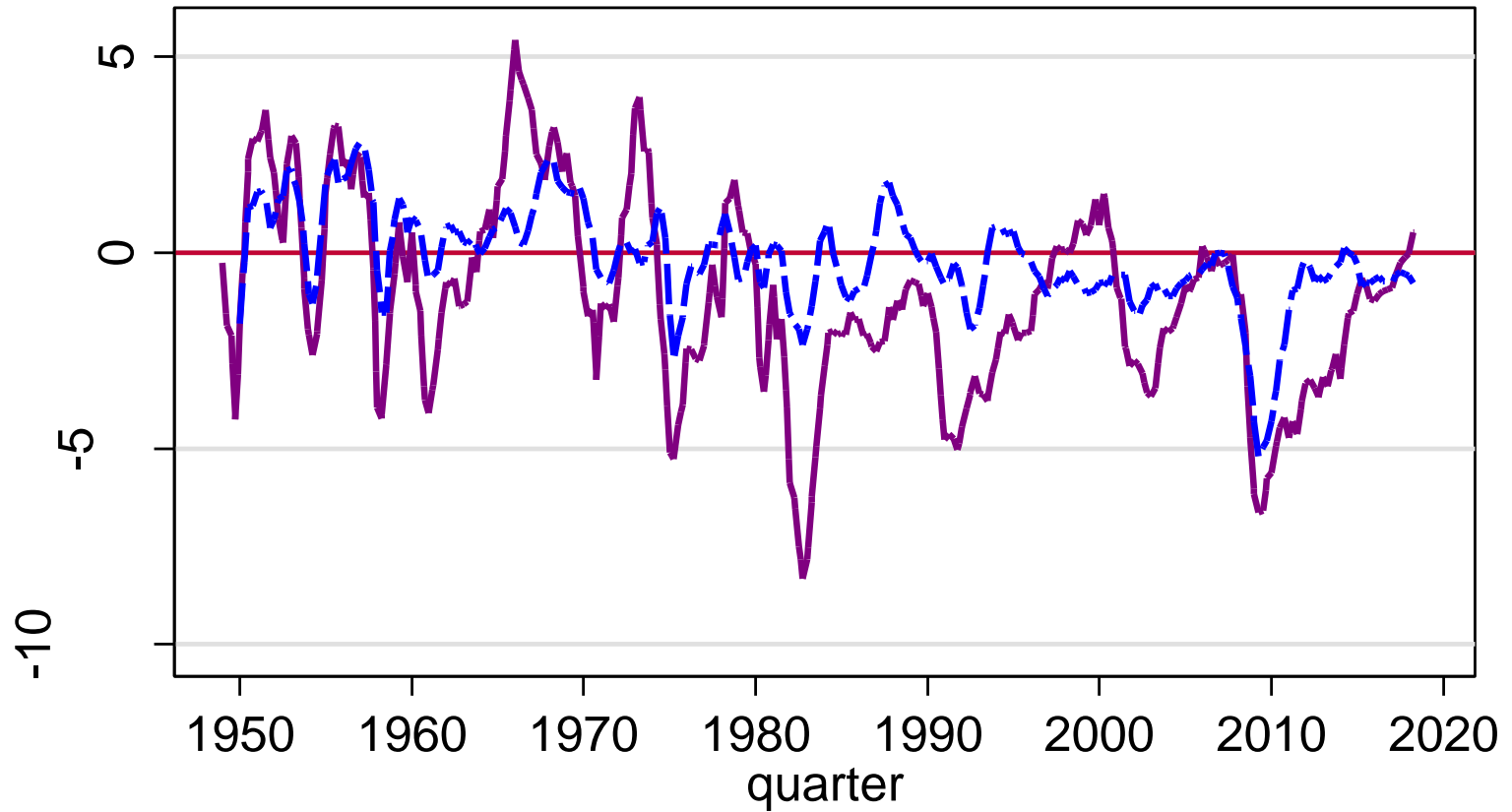
What's going on?

- The Blanchard-Quah method decomposes **only log changes in GDP** into permanent and temporary.
- To obtain levels, **CGU need to add a constant growth rate**. As they discuss, this is a key step.
- Although the estimates for 2017 and 2018 are based on a 30 year rolling window, they use the average growth rate of GDP since 1947 to create levels.
- They assume that BQ potential grows 3.2% per year, even though actual GDP grew at only 2.5 % per year over the last 30 years.
- Thus, their estimate of $Y - Y^*$ declines 0.7 % per year on avg.

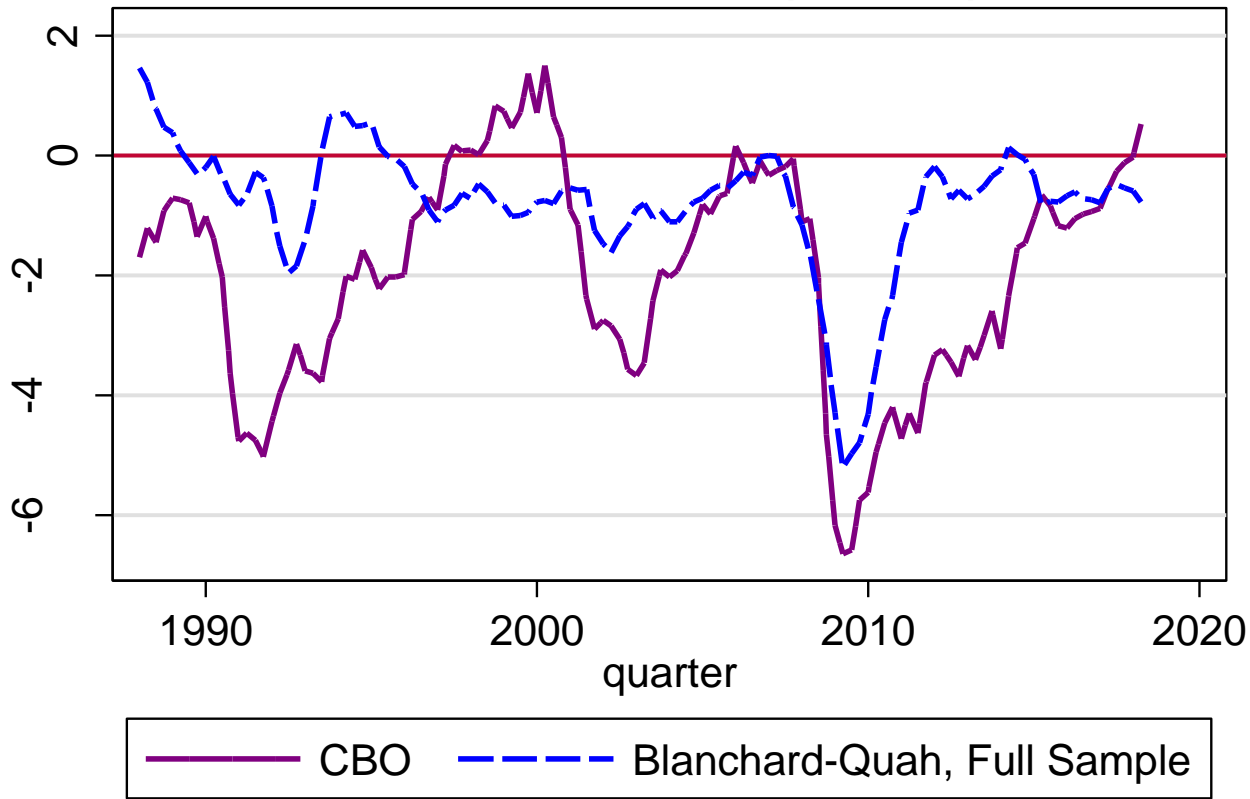
Estimation over the full sample

- I used updated data and re-estimated their Blanchard-Quah model over the sample back to 1947 and created gap estimates.
- In this case, because the average growth rate assumed is equal to the actual growth rate, the path of potential GDP has the same growth rate as the path of real GDP.

Estimates of Output Gap



Estimates of Output Gap



This Blanchard-Quah estimate implies that in 2018q2, the output gap is -0.78%, implying a natural rate of unemployment of 3.5%

Comments

- The problem of sensitivity to the assumed growth rate also **affects several of the other alternative methods** they explore.
- The Blanchard-Quah and the other alternatives have the advantage of **applying economic theory to time series data** to identify permanent versus transitory shocks so that potential output only changes when the economy is hit by shocks that are estimated to have permanent effects.
- However, **much more attention** needs to be paid to the transformation of the growth rates into the path.

Conclusions

- Important paper that effectively demonstrates that standard measures of potential GDP overreact to temporary shocks and underreact to permanent shocks.
- It makes a convincing argument that we can do better.
- The alternative methods explored are promising, but the methods still need work so any implied gap estimates are “not yet ready for prime time.”
- For now, I think I’ll stick with the CBO estimate of the gap.

Estimates of Output Gap

