

COMMENTS ON “WHAT’S UP WITH THE PHILLIPS CURVE?”

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The main fact the paper documents is that the relation between a one-dimensional measure of real activity and the rate of wage or price inflation has weakened between pre-1990 and post-1990 periods in the US. This is a robust result, emerging with a variety of measures of real activity and a variety of time series modeling approaches. But despite using tools capable of unraveling a richer story, the paper maintains a one-dimensional conceptual framework, with a single driving force for a “business cycle” that moves all variables in a repeating pattern. The paper acknowledges that this does not account for all variation in inflation, but suggests that longer-run variation in inflation can be set aside when focusing on its “cyclical” variation. This leads the paper into a discussion of why inflation has become less variable over a long span of time, while making no effort to account for the fact that inflation’s level has come steadily down over this span of time and has recently been persistently below Fed targets.

Most variation in inflation is not movement along a Phillips curve. Since the paper does not display impulse responses to disturbances other than its composite unemployment-shifting shock, I have estimated a simple 3-variable VAR, with monthly data on industrial production, the PCE deflator, and average hourly earnings of production and non-supervisory employees. The impulse responses, pre- and post-1990, are displayed in figures 1 and 2.

The first column of each of these figures captures the main message of the paper: There is a disturbance that moves output, prices, and wages in the same direction. Scanning across the first row, we can see that this first-column shock accounts for most of the variation in output. (All plots in each row have the same scale, so that visually smaller responses account for less variation in the row variable.) The size

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Pre-1990 impulse responses

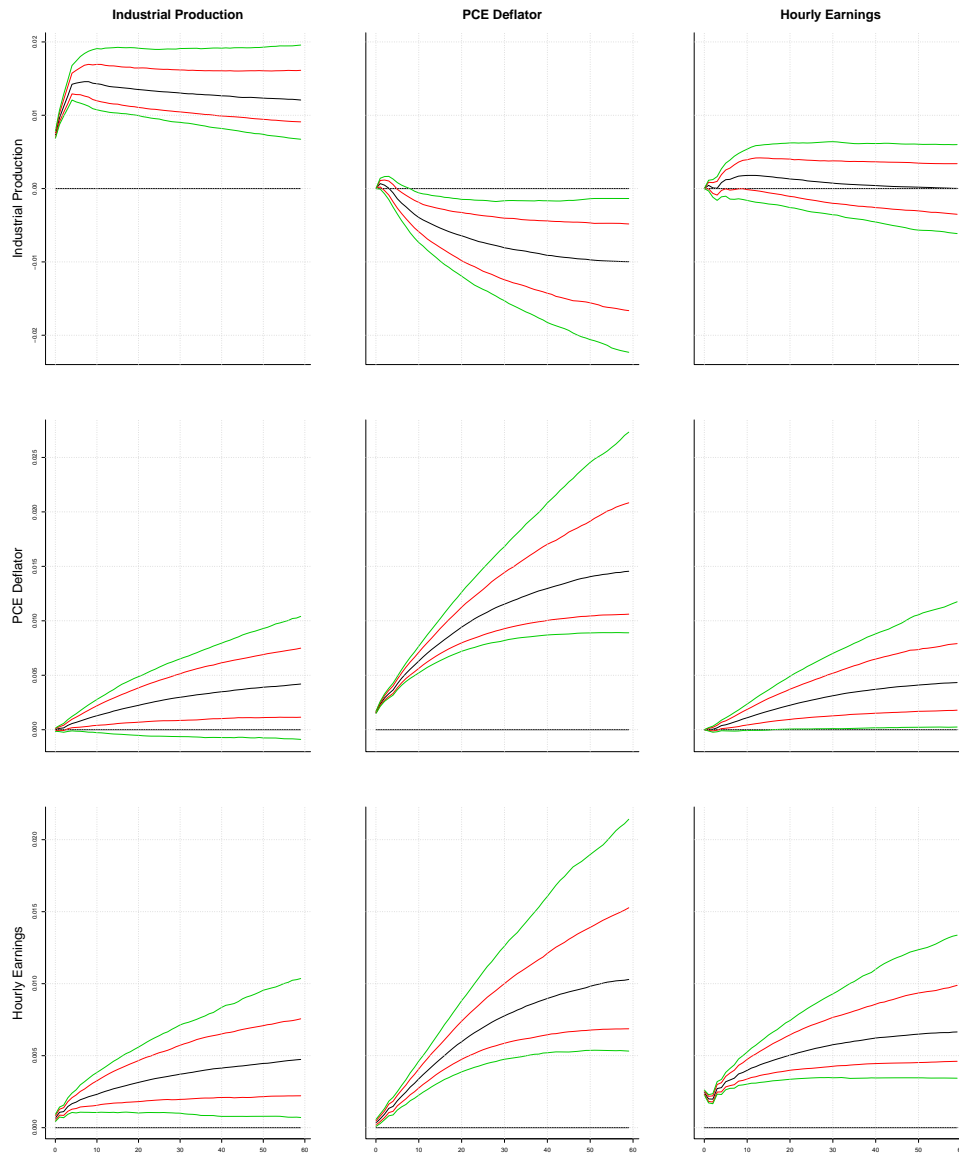


FIGURE 1. Impulse responses from a VAR estimated with monthly data for industrial production, PCE deflator, and average hourly earnings for January 1965 through December 1989. The impulse responses have been orthogonalized by Cholesky decomposition, with industrial production first in the ordering. Estimation used a Minnesota prior. The two error bands are 68% and 90% bands.

Post-1990 impulse responses

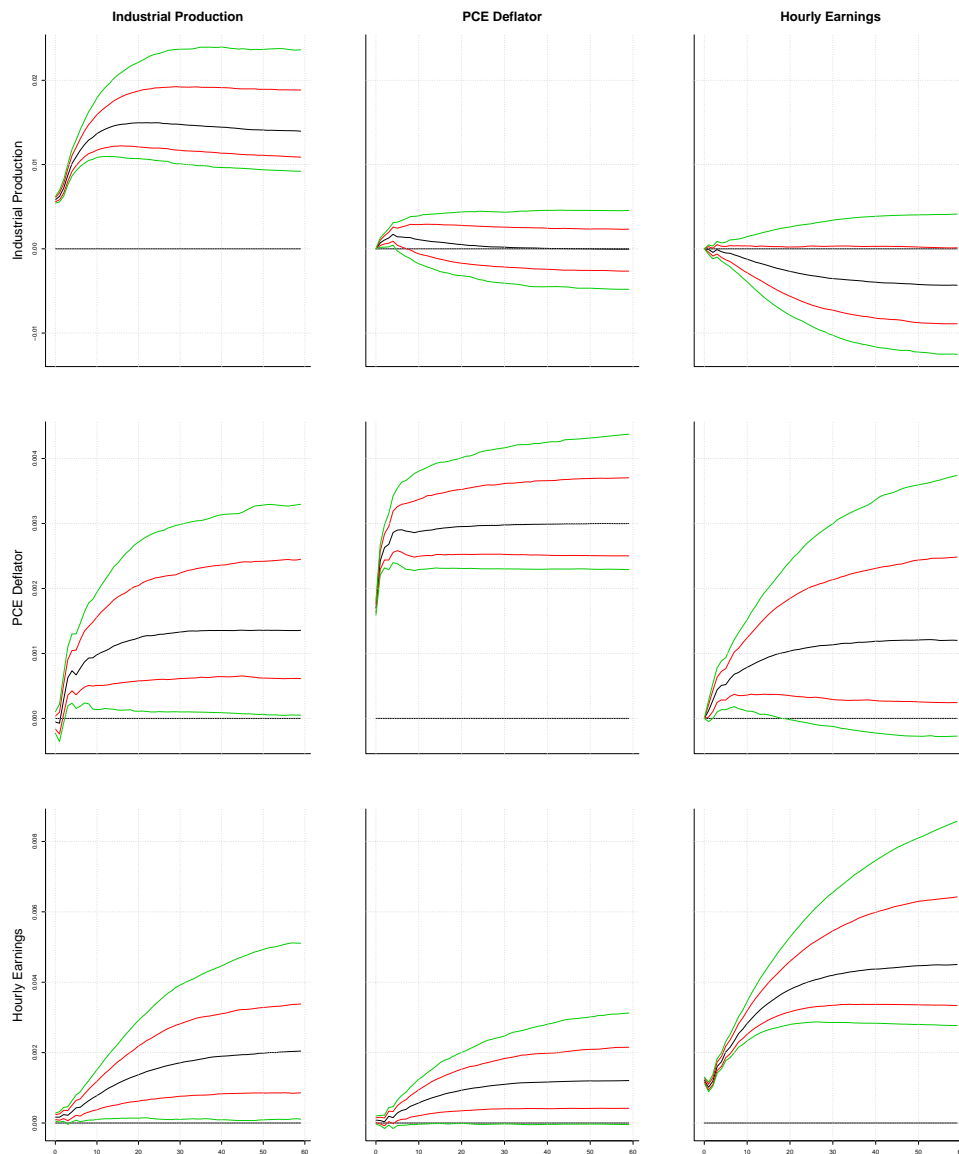


FIGURE 2. Impulse responses from a VAR estimated with monthly data for industrial production, PCE deflator, and average hourly earnings for January 1990 through December May 2016. The impulse responses have been orthogonalized by Cholesky decomposition, with industrial production first in the ordering. Estimation used a Minnesota prior. The two error bands are 68% and 90% bands.

of the first-column disturbance to industrial production is about the same in both plots, with the median estimate of long run response of industrial production (at the end of the five years shown) around 1.4 per cent in both periods. The scale of the price and wage rows of the plots is quite different in the two periods. The median estimate of the long run response of the PCE deflator to this first-column shock is around 0.12 per cent in the post-1990 period and around 0.40 percent in the earlier period. For the wage response the corresponding responses are 0.20 per cent and 0.5 per cent. While these differences are in the same direction as found in the paper, it is worth noting that the 68% error bands overlap.

What is omitted from the paper is the message of the bottom two rows of the plot arrays. For both prices and wages, in both time periods, most of the variation is being generated by disturbances that do not move output in the same direction as wages and prices. In the pre-1990 case, the second column, which accounts for most of the variance in prices and wages, is a shock that moves output down and both prices and wages up. This probably reflects the oil-shock stagflation of the 1970's. In the post-1990 case the corresponding shock is in the third column. It also moves output down and inflation and wages up, though the output decline is only marginally statistically significant. The second column post-90 and the third column pre-90 are similar in showing almost no response of industrial output and substantial price and wage responses, though the relative importance of these shocks for explaining price inflation is greater after 1990.

The responses in the second two rows are all at a smaller scale after 1990, but the relative importance for explaining wages and prices of the first column shock, which behaves like a movement along a Phillips curve, is about the same in both periods. These responses do fit the story that the "slope of the Phillips Curve", the response of wages and prices to the level of business activity, has declined. They do not fit the additional claim in the paper that this is the main source of the decline in variability of inflation.

The US, Japan and the Euro area all moved steadily toward zero interest rates and below-target inflation after 1990. Benhabib, Schmitt-Grohé, and Uribe (2001) showed

us that, once the zero bound on interest rates is recognized, the standard modeling of inflation dynamics with a Taylor rule policy leads to a drift toward near-zero interest rates and low or negative inflation. Their argument depends on there not being a reliable fiscal expansion response to the occurrence of the low interest rates, but in light of recent experience this seems realistic.

The BSU model can explain persistent low inflation, persistent low interest rates, inability of the Fed to affect inflation, and insensitivity of inflation to real disturbances. It does not explain the high levels of real government debt in the US or the low real interest rates. We don't have a model that pulls all these facts together. But BSU seems a better starting point for understanding these facts than a narrow focus on the Phillips Curve.

I also have one narrower criticism of the paper. I'm not convinced there is any substantial difference between wage and price inflation in the changes between the pre- and post-1990 periods. Both in Figure 3.3 and in Figure 5.1 the sizes of the responses of wage and price inflation are quite similar in the post-1990 period. In Figure 3.1 the responses of wage inflation seem weaker, not stronger, than those of prices. So the claim that the wage Phillips Curve is still important after 1990 does not seem supported by the reduced form statistical analysis. It depends on the results in section 6, which invokes the theoretical structure of the New York Fed model, and in particular the notion of separate wage and price "Phillips Curves" with mutually uncorrelated shocks and driven by distinct real variables. The idea that workers have pricing power and control the quantity of their labor to maintain a wage markup, implicit in this specification of a wage Phillips curve, is in my view at best a modeling convenience. So this aspect of the paper's conclusions might need several grains of salt.

REFERENCES

- BENHABIB, J., S. SCHMITT-GROHÉ, AND M. URIBE (2001): "The Perils of Taylor Rules," *Journal of Economic Theory*, 96, 40–69.

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