DISCUSSION OF

HAS THE PHILLIPS CURVE FLATTENED AND WHY?

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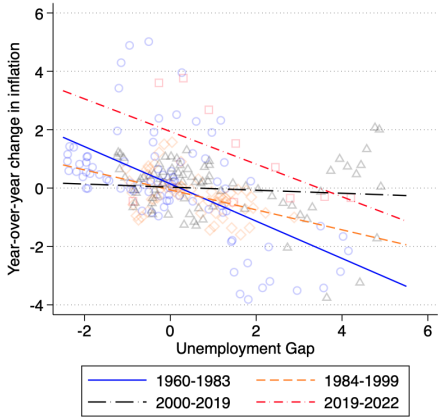
Instability in the Phillips Correlation



My calculations updating Stock and Watson (2019) Figure 1.

Instability in the Phillips Correlation

Did the slope of the Phillips curve change, or did other blocks of the model changed?

- Shifts in the Phillips curve
  1. Cost push shocks
  2. Long-term inflation expectations
- Relative variance of demand and supply shocks
  1. Quality of the conduct of monetary policy

The Phillips Curve

New Keynesian formalization

$$\pi_t = \beta E_t \pi_{t+1} - \lambda(u_t - u_t^n) + \nu_t$$

Three drivers of inflation

- Expected inflation: $E_t \pi_{t+1}$
- Measure of "output gap": $u_t - u_t^n$
- Cost-push shocks: ν_t

Object of interest is λ

- How much an increase in demand affects inflation

Beyond the textbook formulation

- Relax some features of the model $\beta E_t \pi_{t+1} \rightarrow \gamma_f E_t \pi_{t+1} + \gamma_b \pi_{t-1}$
- The Phillips curve becomes

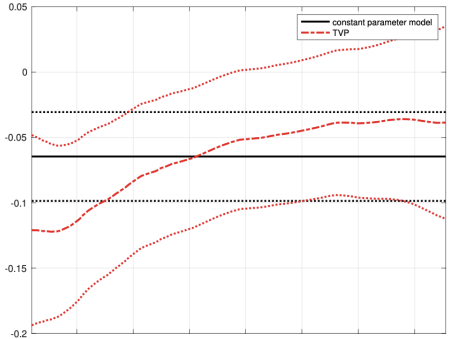
$$\pi_t = \gamma_f E_t \pi_{t+1} + \gamma_b \pi_{t-1} - \lambda(u_t - u_t^n) + \nu_t$$

- Flexible evolution of parameters $\gamma_f, \gamma_b, \lambda$

$$\pi_t = \gamma_{f,t} E_t \pi_{t+1} + \gamma_{b,t} \pi_{t-1} - \lambda_t(u_t - u_t^n) + \nu_t$$

- Interesting!

Main Result



(a) λ_t

Point estimate: qualitative flattening of the Phillips curve. How important?

Flattening Effect on Inflation Dynamics

Very simple exercise based on the manuscript's estimated coefficients

- Out of the variation left to be explained after controlling for expectations

$$\pi_t - \hat{\gamma}_{f,t} E_t \pi_{t+1} - \hat{\gamma}_{b,t} \pi_{t-1}$$

- Plot variation explained by the slope of the Phillips curve

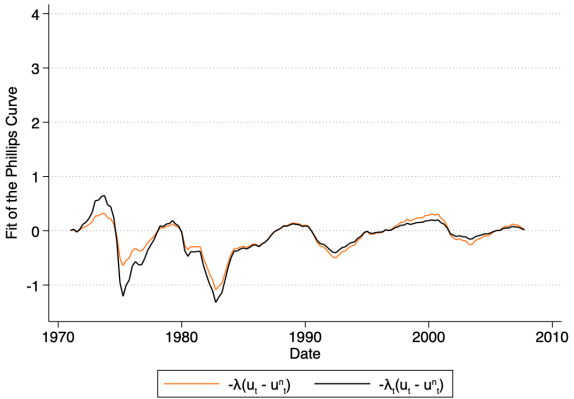
$$-\hat{\lambda}_t (u_t - u_t^n)$$

- Plot alternative using constant parameter value

$$-\hat{\bar{\lambda}} (u_t - u_t^n)$$

- Sample: same as in the paper (1970-2008)
- SPF, Core PCE, u gap. Time aggregate ($\lambda \times 4$ since using 12-m inflation rates)

Flattening Effect on Inflation Dynamics

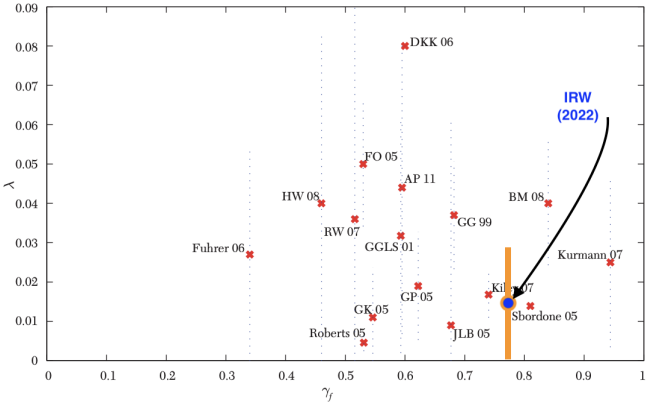


Small range. Orange and black lines behave similarly

Comment 1: Interpretation

- Change in slope is quantitatively small in explaining inflation dynamics
  - Consistent with Hazell, Herreño, Nakamura, Steinsson (2022)

Comparison with the Literature (λ using the labor share)

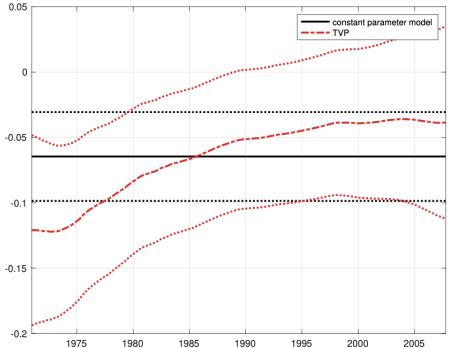


Source: Mavroeidis, Plagborg-Moller, and Stock (2014).

Comment 2: What worlds are we rejecting?

- The paper would benefit from discussing a benchmark
- The most natural one is the constant parameter model
- In the preferred specification the constant parameter point estimate is not rejected

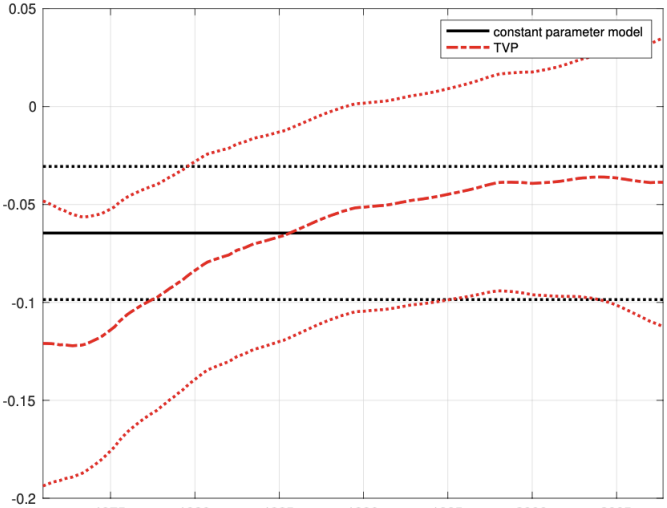
Main Result



(a) λ_t

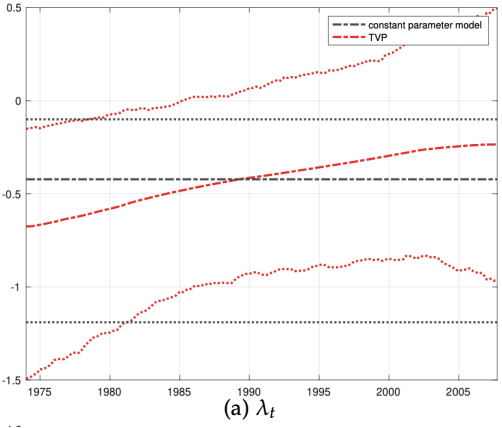
Comment 3: Sensitivity to specification choice

- Many potential instruments, lag structure, specifications.
- Influence the estimated slope
- Not a new problem, same problem when estimating $\bar{\lambda}$ in the time series
- Manifestation of a weak instruments problem
- Challenge compounded by λ_t?
- example: estimate λ_t in the most recent sample using small monetary policy shocks.



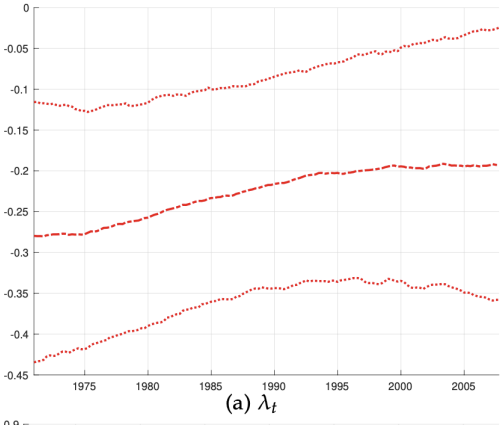
(a) λ_t

1970Q1-2008Q1. HAC-robust variance estimates. Unemployment gap, SPF forecast.



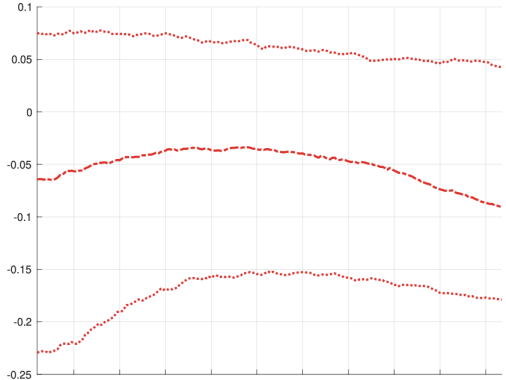
(a) λ_t

1974Q1-2008Q1. Unemployment gap, realized future inflation. IVs: 20 lags of Romer and Romer shocks (small shocks after the Volcker Disinflation)



(a) λ_t

1971Q1-2008Q1. Same Specification as in Gali Gertler Lopez-Salido. IVs: 4 lags of inflation, two lags of unemployment, wage inflation, and output gap.



(a) λ_t

1971Q1-2021Q1. Same Specification as in Gali Gertler Lopez-Salido. IVs: 4 lags of inflation, two lags of unemployment, wage inflation, and output gap.

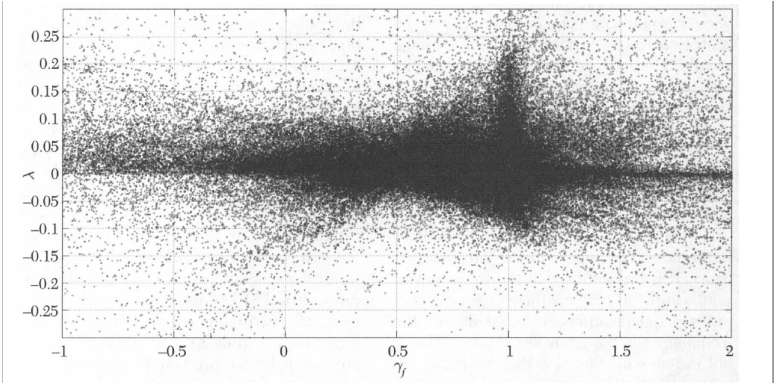


Figure 5. Point Estimates: Output Gap Specifications

Source: Mavroeidis, Plagborg-Moller, and Stock (2014).

I can imagine a similar quantification on the manuscript. Source: Mavroeidis, Plagborg-Moller and Stock (2014)

Conclusion

- Looking forward to future iterations!
- Interesting exercise
- Main suggestions
  1. Use a metric for the quantitative relevance of the changes in slope
  2. Discuss more extensively how these estimates confirm/reject prior evidence
  3. Document systematically the sensitivity of λ due to specification choice and weak instruments