Comments on *Sticky Information and Inflation Persistence: Evidences from U.S. data*

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(8th Annual Bank of Finland/CEPR Conference
1–2 November 2007)

Summary of the Paper

- This paper provides a simulated moment estimator of the Sticky Information Phillips Curve (Mankiw and Reis (2002))
- Previously, the SIPC model is estimated matching the covariances between inflation and lagged shocks. Hence, firms' frequency of info updating, $\lambda \in [.35, .57]$.
- In this paper, the model is estimated by matching the conditional variance of inflation as well. Then λ is significantly higher, $\lambda \in [.71, .86]$.

Implementation

$$E\left[\left(\frac{\alpha\lambda}{1-\lambda}y_t+\alpha\Delta y_t\right)\left(\delta\varepsilon_{t-i}\right)'\right]=\left(1-\lambda\right)^i\delta A_i\Sigma\delta'$$

$$for\ i=0,\ldots,l$$

- The paper use a VAR(p) model to fit Z(t), which includes inflation, the growth rate of output gap, and interest rate. From the estimated VAR model, the exogenous shocks and the covariance are calculated.
- Then, the paper uses the simulated moments to estimate λ.

Why VAR

- Reis (2004) assumes an arbitrary process for exogenous shocks that is highly persistent itself. Therefore, it is unknown how much persistence of fitted inflation came from the intrinsic dynamics of inflation with sticky information and how much from the exogenous shocks process.

- Consequently, this paper uses the VAR estimation to calculate the shocks.

Structural Break for VAR

- The sample goes from 1957q1 to 2005q
- However, backward-looking empirical models for US inflation tend to overpredict inflation, particularly after the mid-1990s. Balakrishnan and Ouliaris (2006, IMF WP06/159)
- The correlation between inflation and output gap has also shifted.
- There has also been a reduction in the size and volatility of the business-cycle component of inflation.

Figure 2. Traditional Phillips Curve: Actual Versus Forecast Inflation

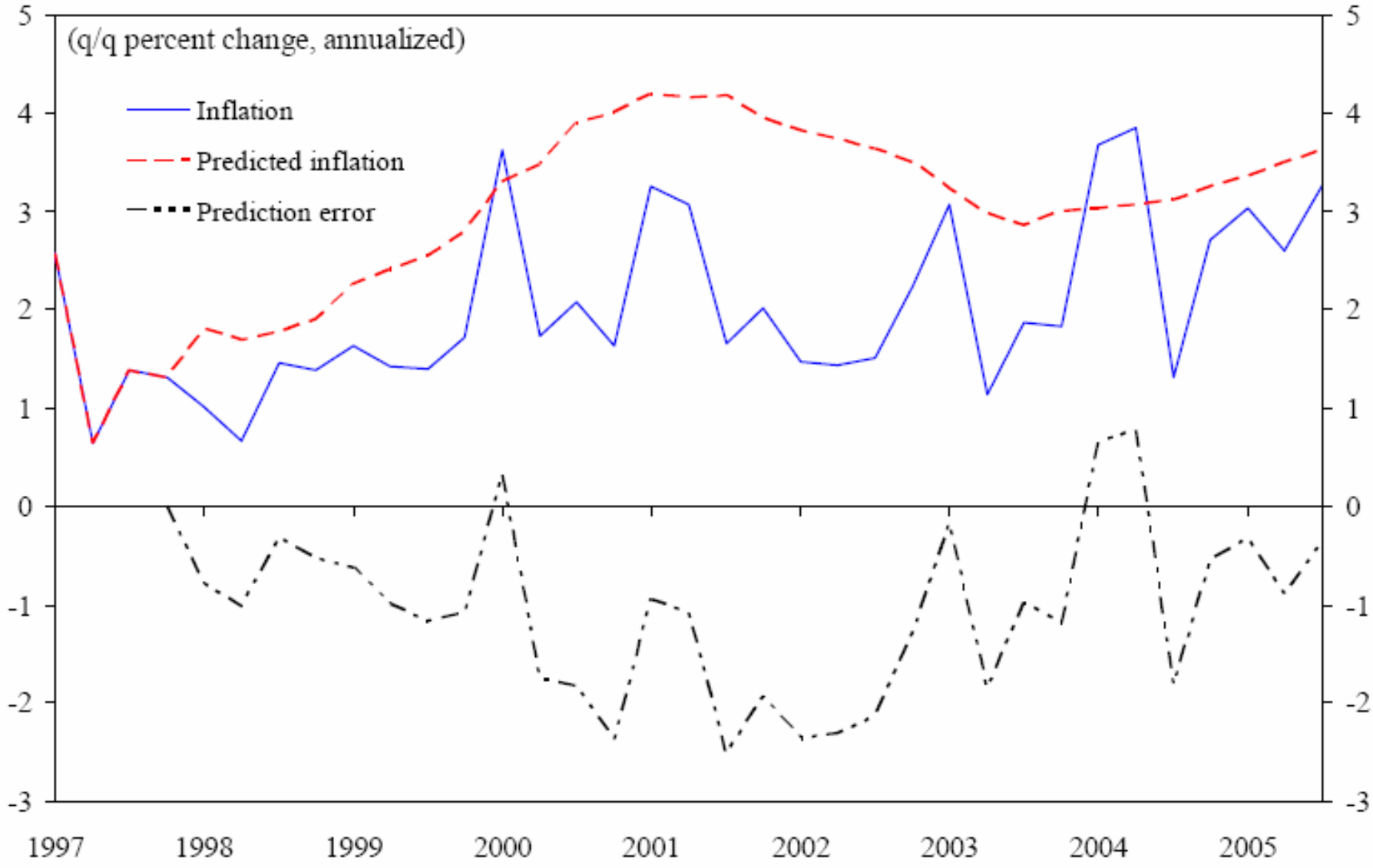
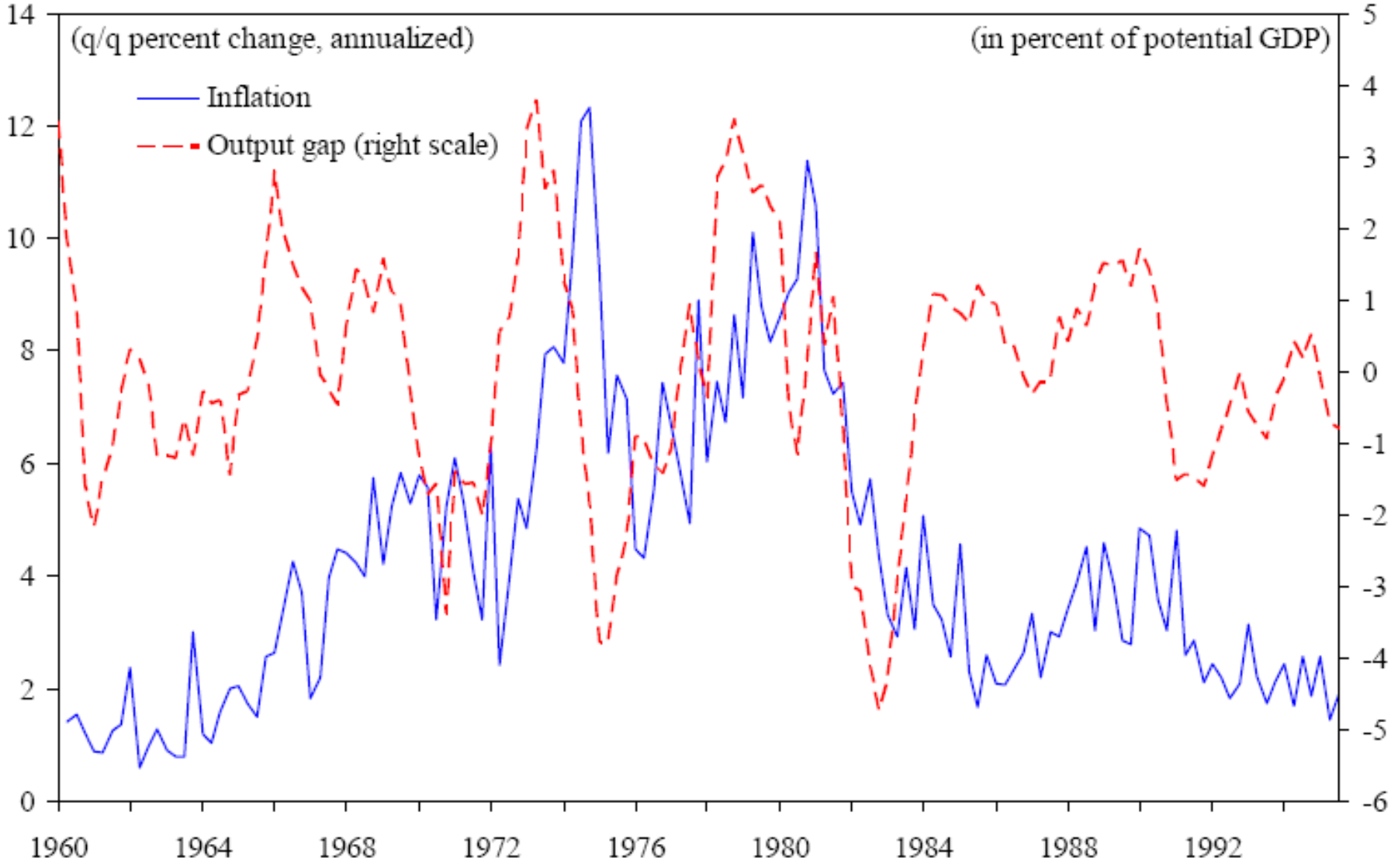


Figure 1. The Output Gap and Inflation



What do We learn?

- For example, how to improve the SIPC model? Is $(1-\lambda)^i$, an oversimplication?
- Or is it because Mankiw and Reis (2002) is based on a highly stylized partial equilibrium model (i.e., demand is exogenously given). Can we employ DSGE model, where aggregate demand may arise from an intertemporal household maximization problem rather than from an exogenously assumed static demand curve?
- Besides quantitative difference with the moments, are there qualitative difference?

Decline of λ

- Improved monetary policy credibility may have caused inflation rates to decline. This is related to the adoption of a low implicit target for inflation, which helps anchoring inflation expectations.
- Hence λ may have decreased over the time. Bayoumi and Sgherri (2004, IMF WP 04/24) find that reductions in uncertainty about the path of the real interest rate indeed produces a gradual reduction of the nominal inertia in the Phillips curve.
- Can we estimate a time varying λ?

Cross-section λ

- Beyond U.S. data, can we examine if the increase in transparency and predictability of central bankers' behavior across countries, say due to inflation targeting, have created a reduction of λ?

Can λ be Endogenous?

- More broadly, as discussed in Amato and Shin (2003), persistent real effects of nominal shocks can be generated in a model that assumes that fully rational individuals have only access to noisy information about the state of nominal aggregate demand.

- These effect, for plausible parameter values, are reinforced by the anticipation that others are behaving in the same manner (beauty contest). Hence can λ be a function of the inflation rate, which serves as a public signal?

Timing of Shocks

- Are the changes of macroeconomic policy (such as the interest rate) expected or not? For example, there have been expectation of interest rate cut, which may not be picked up by the VAR.
- How does the expected or pre-announced macro policy work in the model? Would professional forecast help on this?