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EUROSISTEMA

"Lower for longer: Neutral Rates in the United States"
by Andrea Pescatori and Jarkko Turunen

Comments by Stefano Neri

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Secular stagnation, growth and real interest rates

EUI, Florence - 19 June 2015

Outline

1. The paper: summary and results

2. Comments, suggestions and questions

What the paper is about

Reverend Thomas Bayes….

… meets President John Williams…

… at the IMF

Summary

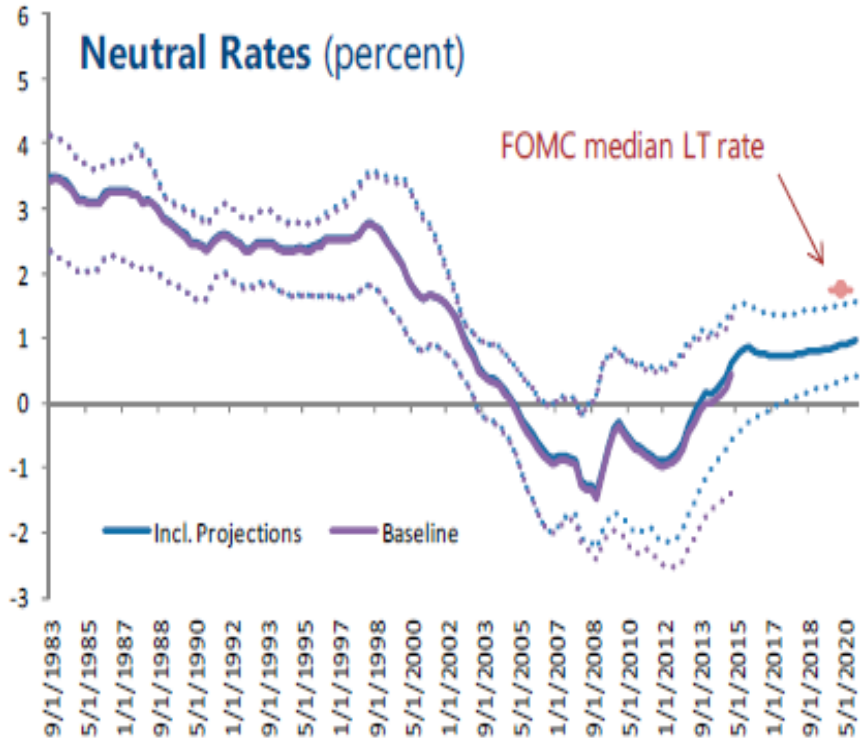
1. Objective: semi-structural model to estimate "neutral" rate in the U.S.

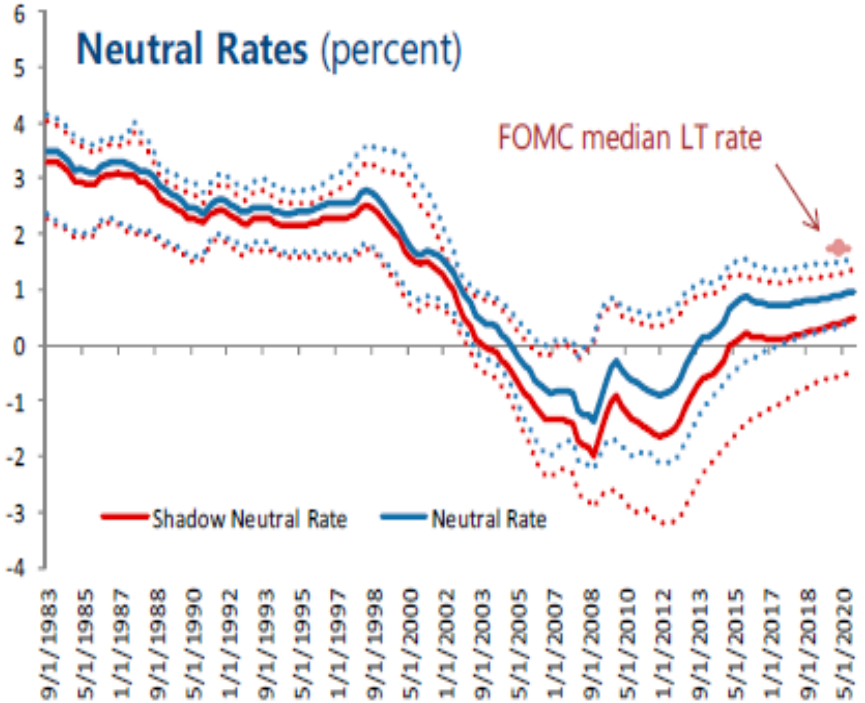
   a. Improve upon Laubach and Williams (2003)

2. Methodology: maximum likelihood / Bayesian

3. Results: current neutral rate $\cong 0$, expected to remain low up to 2020

Summary (cont'd)





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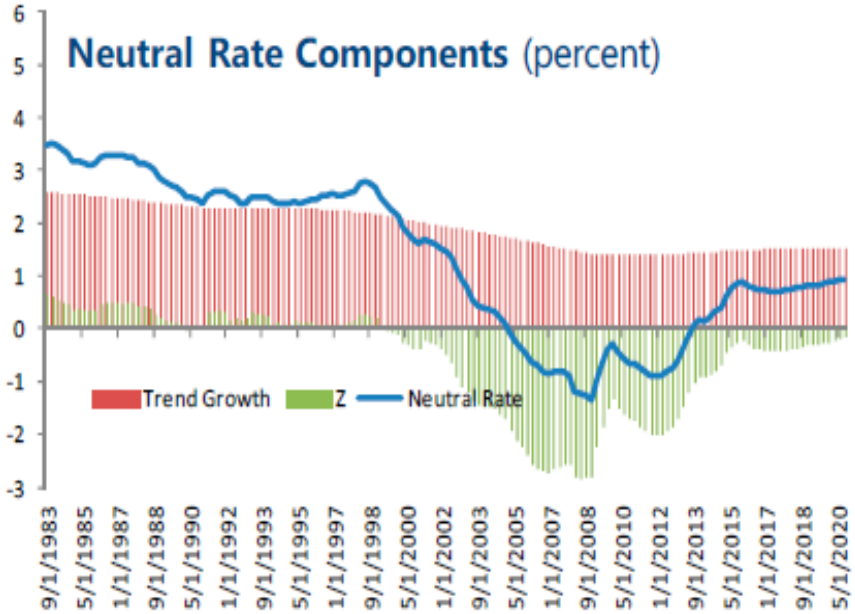
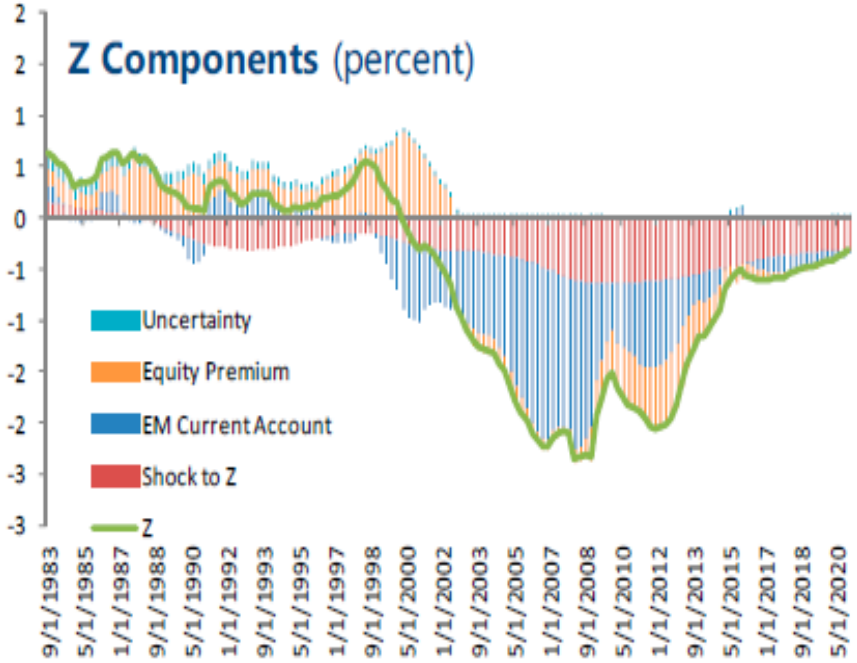




Why is it important?

When will the Federal Reserve lift off?

Where will the Federal funds rate end up?

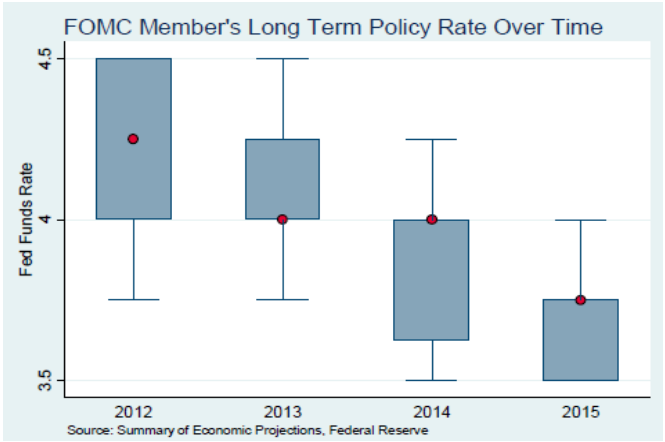
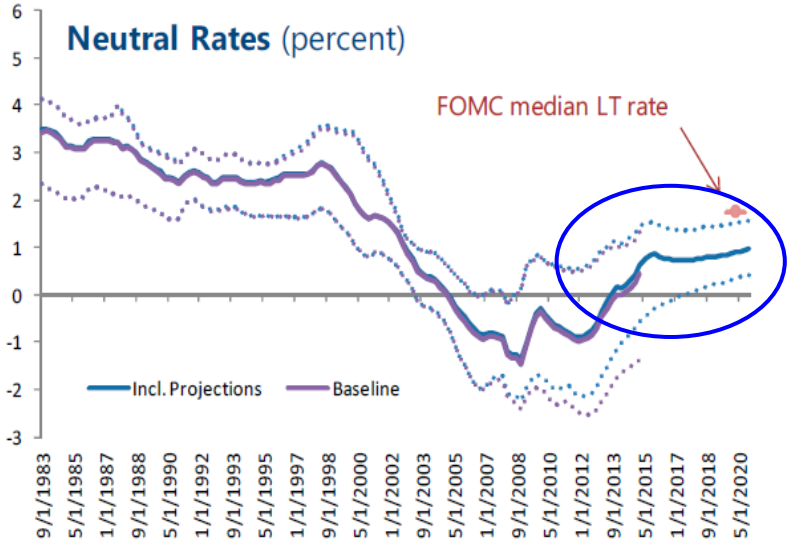


Chart 5.



The model

What makes the paper different from Laubach and Williams (2003)?

$$x_t = a_1 x_{t-1} + a_2 x_{t-2} - a_r(r_{t-1} - r^n_{t-1} + r_{t-2} - r^n_{t-2}) + \epsilon^s_t$$

$$\pi_t = \sum_{j=1}^{8} b_j \pi_{t-j} + b_y x_{t-1} + b_i \pi^m_{t-1} + b_o \pi^o_{t-1} + \epsilon^p_t$$

$$r^n_t = c g_{t-1} + z_t.$$

Incorporate other factors that may affect natural rate

$$z_t = d_1 z_{t-1} + d_2 z_{t-2} - d_c \Delta S_t - d_e \Delta E_t - d_p \Delta P_t + \epsilon^z_t.$$

$$R^n = \rho(\delta, \sigma_C) + \gamma \Delta \bar{Y}^n$$

Saving glut (endogenous to Y?) and uncertainty

Comments and suggestions

On the model

$$x_t = a_1 x_{t-1} + a_2 x_{t-2} - a_r (r_{t-1} - r^n_{t-1} + r_{t-2} - r^n_{t-2}) + \epsilon^s_t$$

$$\pi_t = \sum_{j=1}^{8} b_j \pi_{t-j} + b_y x_{t-1} + b_i \pi^m_{t-1} + b_o \pi^o_{t-1} + \epsilon^p_t$$

$$r^n_t = c g_{t-1} + z_t.$$

$$z_t = d_1 z_{t-1} + d_2 z_{t-2} - d_c \Delta S_t - d_e \Delta E_t - d_p \Delta P_t + \epsilon^z_t.$$

- There is little justification for the selection of the variables and the timing
- Why not explicitly take into account financial frictions?

LW (2003)

$$r^*_t = c g_t + z_t,$$

$$y^*_t = y^*_{t-1} + g_{t-1} + \epsilon_{4,t},$$

$$g_t = g_{t-1} + \epsilon_{5,t}.$$

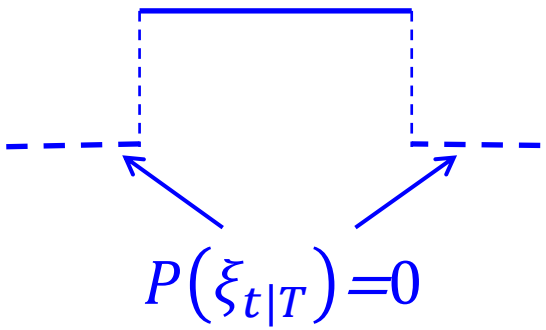
Comments and suggestions (cont'd)

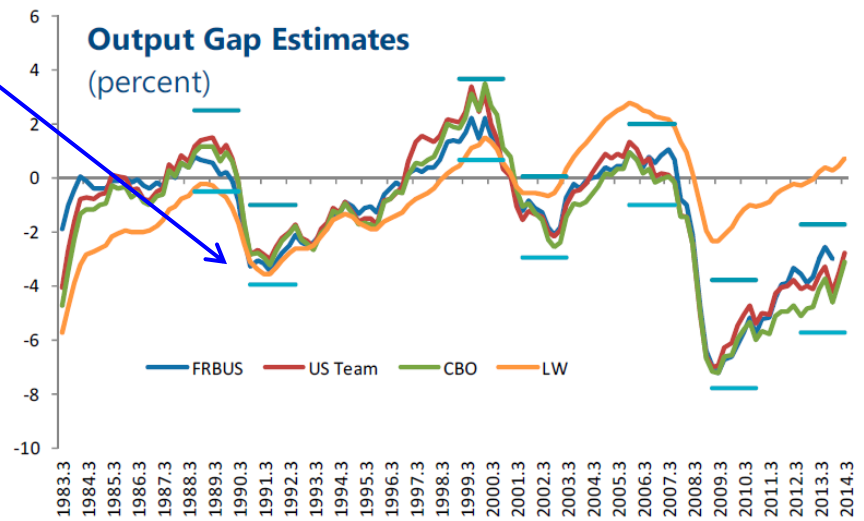
On the (Bayesian) estimation

- Non standard Bayesian approach $P(\theta|Y) = \frac{P(\theta)P(Y|\theta)}{P(Y)}$
- No prior on θ
- Prior on smoothed estimates of output gap and potential growth

$\xi_{t|T} = E(\xi_t|Y_T)$ $P(\xi_{t|T})$

- Impose bounds on $\xi_{t|T}$





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Comments and suggestions (cont'd)

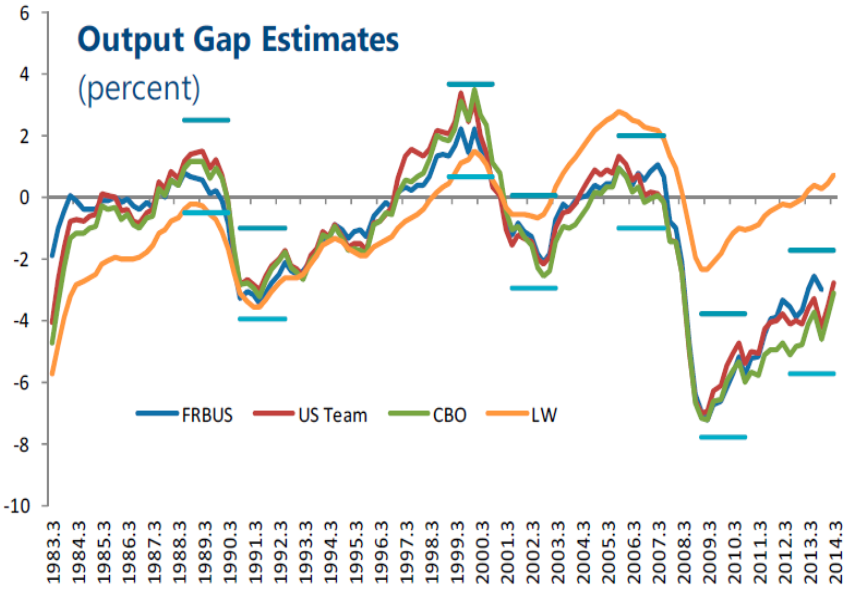
On the (Bayesian) estimation

- Suggestion 1: use several measures of output gap

$$X_{i,t} = \lambda_i(y_t - \bar{y}_t) + \nu_{i,t}$$

where *i*=FRBUS, US Team, CBO and LW

(Iacoviello and Neri, 2010)



- Suggestion 2: impose prior on parameters based on Laubach and Williams (2003)

Comments and suggestions (cont'd)

On the (Bayesian) estimation

- Suggestion 3: try alternative measures of uncertainty and include indicators of financial tensions
- On the interpretation of the real interest rate gap:

  I see a tension between faith in the estimates of the natural (or neutral) rate and concerns on the "gap"

- Question 1: why not using a DSGE model?
- Question 2: how do prediction errors (or fit vs actual) look like? Some diagnostics may be useful

To sum up

- A very interesting paper on an important topic…
- … which is very high in the agenda in Europe…
- … which worries a lot the financial industry. But…
- … understanding why rates are low is key for assessing the associated risks
- Issue of where natural rate stands comes up periodically, in particular at central banks
- Most of the time conclusion is that it is not usefu in policy-making. Maybe this time is different!