

Monetary Transmission in Simple Backward-Looking Models: The IS Puzzle

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What is GH's paper about?

- Estimation of standard backward-looking (BL) Phillips curves and IS schedules for the U.S., Euro Area, and Japan. Puzzling finding: Insignificant ex-post real interest rate, i.e. 'IS puzzle' (Nelson, 2001).
- Why is this puzzling? No interest rate channel ... can monetary policy really control the economy in the short-run?

GH's hypothesis and investigation

- Source of the problem: Model mis-specification!
 - 1) Omission of forward-looking components (RE);
 - 2) No concern for residential property prices, real share prices, or real broad money (Wealth effects).
- GH's findings: 1) does not help much, while 2) solves the puzzle. In particular, residential property prices significant for all, real share prices for the U.S., and real broad money for the Euro Area.

GH's contribution

- Clearly written paper, nicely motivated. It stimulates to think more seriously about the importance of undertaking empirical work on a schedule such as the IS one.
- It triggers the willingness of deepening our understanding of some *correlations* present in the data.
- A couple of comments regarding GH's findings vs. other researchers' ...

o) Estimated BL Phillips curve for the U.S

- Output gap in the standard BL Phillips curve for the U.S.: Statistically insignificant! At odds with Rudebusch and Svensson (1999)'s estimates. Sampling uncertainty (GH's: 1981:1-2001:4 vs. RS's: 1961:1-1996:2)? Why not a longer sample (e.g. regime shifts)? [Rudebusch and Svensson (1999) cannot reject the null of stability of their estimates.]
- Sum of estimated coefficients for lagged inflation is much lower than 1 (while in Rudebusch and Svensson (1999) is statistically equal to 1): Natural rate hypothesis?

i) Estimated BL IS curve for the Euro Area

'IS puzzle' not found by Peersman and Smets (1999). Possible reasons driving this discrepancy:

- Different samples (GH's : 1981:1-2001:4 vs. PS's: 1975:1-1997:4);
- Different estimators (GH's : OLS vs. PS's: ML+Kalman);
- Different aggregation choices (GH's : Euro Area as a whole vs. PS's: EU5 collecting 'homogeneous' countries (Austria, Belgium, France, Germany, The Netherlands): Aggregation bias?

ii) Estimated hybrid IS curve for the U.S.

- GH (this paper)'s findings for the U.S.: non significant *ex-post* real interest rate, weight on $E_t y_{t+1} = .563$ and significant...
- ... vs. Fuhrer and Rudebusch (2003)'s: significant *ex-ante* real interest rate, quite low (often not significant) weight on $E_t y_{t+1}$!
- Why these differences?

ii) Estim. hybrid IS curve for the U.S. (cont'd)

- Different samples: 1981:1-2001:4 for GH (this paper) vs. 1966:1-2000:4 for FR (2003);
- Different estimators: GMM for GH vs. ML for FR (2003). FR: GMM estimates pretty much affected by small sample bias due to weak instruments (same as yours, J-test not enough ... instruments 'relevance?');
- Different detrended output construction: GH go for a HP filtered gap ... interestingly enough, FR (2003) never find the real interest rate significant when employing HP, while pretty often when using BP, Segmented, Quadratic, CBO.

ii) Estim. hybrid IS curve for the U.S. (cont'd)

- Different real interest rate definition: GH go for an *ex-post* real interest rate, while FR take into account short / *long ex-ante* real interest rate.
- Dennis (2003): Consumption data allows for a better fit w.r.t. output data in the sample 1982:1-2002:2 for the U.S. case.

ii) Estim. hybrid IS curve for the Euro Area [not discussed in Venice]

- GH (this paper): non significant ex-post real interest rate vs. Smets (2003): significant ex-ante real interest rate.
- Same estimator (GMM), but ...
 - different samples (GH: 1981:1-2001:4 vs. Smets: 1977-1997);
 - different data frequency (quarterly vs. yearly).

iii) 'Enriched' BL IS curve

- No forward looking elements in it ... mis-specified model (in the light of your previous GMM estimates)?
- Additional variables are statistically important ...
 - Fiscal variables might also play a role, e.g. the ratio of primary deficit to GDP for the U.S. as in Favero and Monacelli (2003).
 - Significant additional variables: Interpretation? Causality (theory?), proxies for other omitted variables (which ones?) ... First-principles as a selection device, and for attaching a 'structural' interpretation to your results.

Wrapping up

- Is there a puzzle concerning the Phillips curve?
- Is there a 'Significance' puzzle or a 'Magnitude' puzzle for the IS schedule? Robustness check (in terms of different models and estimators) needed.
- If the robustness check confirms the existence of an 'IS puzzle', this paper could represent a starting point for a deeper understanding of the demand side of the economy.

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