Discussion of Schmitt-Grohe and Uribe, Exchange Rates and Uncovered Interest Differentials: The Role of Permanent Monetary Shocks

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Overview

- SGU explore the implications of a new shock-identification approach in an open economy context.
  - US/Japan and US/UK.

- They find:
  - Contrary to much (all?) of the empirical literature, argue that shocks to monetary policy are primarily permanent.
  - Report impulse response functions to the new, permanent monetary policy shock.

- I will raise some questions:
  - Identification
  - Volcker disinflation
  - UIP
  - other things
Identification

• Sign restriction: temporary shocks to monetary policy drive inflation and the interest rate in opposite direction in short run.
  – Finding - virtually all monetary policy shocks are to the permanent component.

• Alternative identification strategy motivated by Friedman (1959):
  "Monetary and fiscal policy is rather like a water tap that you turn on now and that then only starts to run 6, 9, 12, 16 months from now."

• This view, plus assumption that Fed primarily looks at output and inflation, rationalizes a recursive identification procedure:
  – Monetary policy shocks, $e_t$, are least squares residuals in:
    $R_t = f(\pi_t, y_t) + e_t$

  – Approach first implemented by Bernanke and Blinder 1992AER and others.
Recursive Identification

Figure: Response to 50 bpa Interest Rate Cut

- Estimated Impulse Response Functions (solid line) imply:
  - Monetary policy shocks 100% temporary (effect on interest rate lasts for about 1.5 years).
  - For less than a year, monetary shocks drive inflation in the same direction, after which they move in opposite directions.

- Dotted line: estimated model with ‘working capital channel’.

Working Capital Effect

  - Based on industry-level analysis, find that working capital channel important (even more important than demand channel in some manufacturing industries).

- Wright Patman, Chairman of US House Banking Committee until 1975.
  - "...the senselessness of trying to fight inflation by raising interest rates. Throwing gasoline on fire to put out the flames would be as logical."
Working Capital Poses Challenge for Sign-Restriction Identification Strategy

- I generated 1 million artificial observations on $R_t, y_t, \pi_t$ from model with three shocks.
- I apply Martin Uribe’s (closed economy) code to the artificial data and reach the (false) conclusion:
  - 100% of the monetary policy shock comes from the permanent component.
- In fact, the monetary shocks in the model are 100% temporary.
- Sign restriction approach needs a stronger defense.
Volcker Disinflation

• Widespread explanation of large recession in the early 1980s:
  – collateral damage in Volcker’s successful fight against US inflation.

• According to Romer and Romer (Macro Annual 1989, p. 142):
  – “There was another shock to monetary policy on October 6, 1979...the purpose...was to dampen inflationary forces in the economy”.

• But, previous decade’s experience suggested to the public such commitments not credible.
  – The Fed had declared several times before, “this time we’ll permanently reduce inflation”.
  – But, they quickly reversed themselves in 1969, again in 1974.
  – ‘Stop-go policy’.

• Seems reasonable that by 1980 Fed commitments to get rid of inflation would not have been credible.
The Defeat of US Inflation

- The Fed’s inflation target, $\bar{\pi}_t$ drawn from

$$\bar{\pi}_t = \pi_t^{\text{temporary}} + \pi_t^{\text{permanent}},$$

where the public observed $\bar{\pi}_t$ but not the components.
  - When the Fed cut $\bar{\pi}_t$ in October 1979, everyone (sensibly) believed it was $\pi_t^{\text{temporary}}$ that was cut.
  - Thus, at first the economy reacted as though $\pi_t^{\text{temporary}}$ had fallen, so
    - $R_t$ and inflation went in opposite directions.
    - output fell.
  - Eventually, the public realized that the fall in $\bar{\pi}_t$ was actually due to a fall in $\pi_t^{\text{permanent}}$, so
    - both $R_t$ and inflation began to fall.
    - output restored to its efficient level.
The Defeat of US Inflation

• Erceg-Leven model prediction:
  – Huge recession.
  – Initially, sharp rise in interest rates with softening in inflation (anti-Fisherian effect).
  – Eventually, people realized Volcker’s policy change was permanent: then interest rate and inflation both fall and output goes back to normal (Fisherian effect).

• This is what we saw! data

• Implication of Erceg-Levin model:
  – if the public had believed drop in inflation target was permanent, both interest rates and inflation would have fallen immediately with little output loss.
Crucial Test for Conventional View

• The high inflation of the 1970s and its end, is one of three defining moments in the history of the Fed.
  – Important that we understand it.

• Without the idea that changes in inflation typically drawn from transitory part of monetary policy:
  – Hard to find an economically interesting explanation for why Volcker’s victory over high inflation was obtained at such high cost.
Alternative Interpretation of Volcker Recession Suggested by SGU Framework

- Assume people observe $\pi_t^{\text{temporary}}$ and $\pi_t^{\text{permanent}}$ separately.

- Explanation of high sacrifice ratio:
  1. Initially Volcker announced a cut in $\pi_t^{\text{temporary}}$, thus explaining the anti-Fisherian effects observed in the first phase of the deflation after October 1979 (this is the sacrifice).
  2. Later, he surprised everyone by unexpectedly announcing a drop in $\pi_t^{\text{permanent}}$, thus producing the Fisherian effects observed later.
Alternative Seems Unappealing

- Erceg-Levin stresses one factor (lack of credibility) which explains 1. and 2., which otherwise seems like an improbable coincidence of two supposedly unrelated shocks.

- Also, the EL analysis determines *endogenously* how long the drop in $\pi_t^{\text{temporary}}$ lasts and when $\pi_t^{\text{permanent}}$ takes over.
  - EL argument critically depends on the *unimportance* of $\pi_t^{\text{permanent}}$, something that is plausible in light of the experience with ‘stop-go’ monetary policy in the previous decade, but inconsistent with SGU framework.

- In this respect, E-L dovetails with other reasons to think that credibility is important in monetary policy.
Uncovered Interest Parity

- Puzzle for conventional models: two statistical characterizations.
  - Impulse responses (IRFs): policy-induced rise in interest rate raises the premium on domestic (US) rate.
  - Prediction for monthly OLS regression, $\beta = 1$
    \[
    \ln S_{t+1} - \ln S_t = \alpha + \beta (i_t - i^*_t) + u_t
    \]

- In US/Japan data: $\hat{\beta} = -1.25$, US/UK: $\hat{\beta} = -0.59$.

- SGU appear to suggest that the IRF puzzle is mitigated with permanent shock.

  - But, with permanent shocks get the reverse puzzle in the case of Japan: premium on domestic currency falls with positive policy shock to interest rate.

- Also, not clear what insight we get about the (more compelling) regression evidence.
Other Puzzles

- Permanent policy-induced jump in US policy rate creates an apparently permanent jump in US GDP.
- Is there any theory that can account for this?
• By far the biggest response in inflation occurs in the month of the monetary policy shock.
• This seems very surprising and worth exploring more.
• Exploring alternative shock identification schemes seems well worthwhile and thought-provoking.
• The one presented by SGU is very thought-provoking and leads to several follow-up questions.
  – How does sign identification fit in with working capital channel?
  – Seems like we lose a compelling story about Volcker disinflation if we assume only permanent shocks.
    • Maybe it was another shock?
  – Implications of the analysis for UIP?
  – Some of the impulse response signs and magnitudes seem puzzling.
Extra Slides
Figure 2: Impulse Responses of U.S. Inflation and Output to Permanent and Transitory U.S. Monetary Shocks: United Kingdom

Permanent US Interest-Rate Shock
US inflation rate, $\pi_t$

Transitory US Interest-Rate Shock
US Inflation Rate, $\pi_t$

Permanent US Interest-Rate Shock
US output, $y_t$

Transitory US Interest-Rate Shock
US output, $y_t$

Note. See notes to figure 1.
Figure 5: Impulse Responses of U.S. Inflation and Output to Permanent and Transitory U.S. Monetary Shocks: Japan

Permanent US Interest-Rate Shock
US inflation rate, $\pi_t$

Transitory US Interest-Rate Shock
US Inflation Rate, $\pi_t$

Permanent US Interest-Rate Shock
US output, $y_t$

Transitory US Interest-Rate Shock
US output, $y_t$

Note. See notes to figure 1.
**US-JP UIP**

Permanent US Interest-Rate Shock
Uncovered Interest Rate Differential, $i_t - i_t^* - \epsilon_{t+1}$

![Graph of Permanent US Interest-Rate Shock](image)

Transitory US Interest-Rate Shock
Uncovered Interest Rate Differential, $i_t - i_t^* - \epsilon_{t+1}$

![Graph of Transitory US Interest-Rate Shock](image)
US-JP Variance Decomposition

Forecast Error Variance Decomposition at Horizon 36 months. US-Japan pair

<table>
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<th></th>
<th>$\Delta y_t$</th>
<th>$\pi_t$</th>
<th>$i_t$</th>
<th>$\ln S_t$</th>
<th>$\ln e_t$</th>
<th>$i^*_t$</th>
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<td>0.82</td>
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<td>0.08</td>
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<td>0.01</td>
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<td>0.03</td>
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<td>0.07</td>
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<tr>
<td>Permanent Foreign M Shock, $X_t^{ms}$</td>
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<td>0.00</td>
<td>0.93</td>
<td>0.03</td>
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Note: the permanent monetary shock is by far the most important source of variation for $S_t$ and $i_t$. Suggests that IRF on previous slide dominates and that $\hat{\beta} > 1$. 

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