

Oil Shocks and Monetary Policy in an Estimated DSGE Model for a Small Open Economy

Discussion

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Commodity Price Issues Workshop

Bank of Canada

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1 Paper Highlights

- State-of-the-art DSGE model of a small open oil-importing economy
- Oil is used in production of finished goods and is directly consumed
- Estimated using Bayesian methods following Lubik and Schorfheide 2005 and others
- Model is used to analyze the effects of exogenous increase in world oil prices
 - under different market structures/alternative monetary policy rules

2 Main conclusions

1. Baseline calibration produces traditional negative supply shock response (lower GDP, higher inflation)

- sticky prices and wages

- households wish to work more (offset lower consumption) but cannot

$$\hat{w}_t = \hat{\varphi}_t + \sigma_L \hat{h}_t + \hat{c}_t, \quad \hat{\varphi}_t = 0 \text{ with flex. wages}$$

- monetary policy causes or exacerbates negative GDP response when Taylor-style historical rule is followed

- Policy rule appears to be very aggressive

2. Flex-price, flex-wage set-up implies an initial increase in GDP, more inflation

- due to increased downward real wage flexibility
- cheap labour offsets expensive oil
- second-best outcome produces more inflation with greater output stability

3. Monetary policy that replicates flex-wage comes close to second best outcome

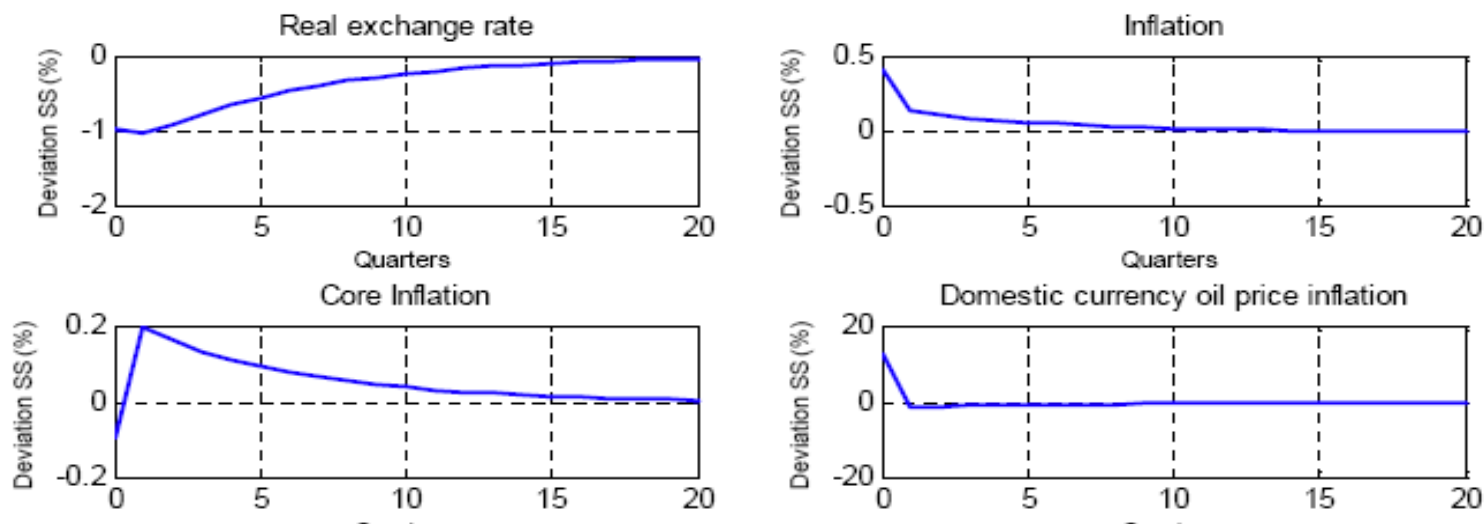
- prices are almost flexible anyway
- allow inflation jump to push down real wage
- confirms past results on the importance of sticky wages for welfare (EHL JME 2000)
- analysis assumes full credibility of policy

Policy Prescription: If credibility is not an issue, jumping on inflation in a negative supply shock is bad policy

3 Specific Comments

1. Empirical exercise:

(a) Do we believe the speeds of adjustment? Most peaks appear in Q1/Q2 of shock



(b) What non-data information is being used to form priors?

(c) How do you replicate inflation data with nearly flexible prices, no real rigidity?

$$\mu \equiv \frac{(1 - \phi_H)(1 - \beta\phi_H)}{\phi_H(1 + \beta\xi_H)} = 2.1$$

- Studies for U.S. suggest $\mu < 0.1$

2. Oil distribution sector. How does ψ_t work?

$$P_{O,t} = P_{O,t}^* \psi_t$$

3. Extra commodity export?