Interest Rate Transmission, Lending Conditions and Monetary Policy in the Philippines

Yoga Affandi and Shanaka J. Peiris
**APD PHILIPPINES - IMF**
December 13th, 2011

Motivation

- Policy interest rates are expected to anchor money market rates and bond yields that act as benchmarks to deposits and loan rates.

- In the Philippines, money market and treasury bond yields have at times moved in opposite directions to and fallen below the policy (RRP) rate.

- What are the policy implications of the spread between policy and market rates and its determinants?

Policy and Market Interest Rates

Benchmark money (PHIBOR) and treasury bills (91-day and 1-year) are significantly below the RRP rate.
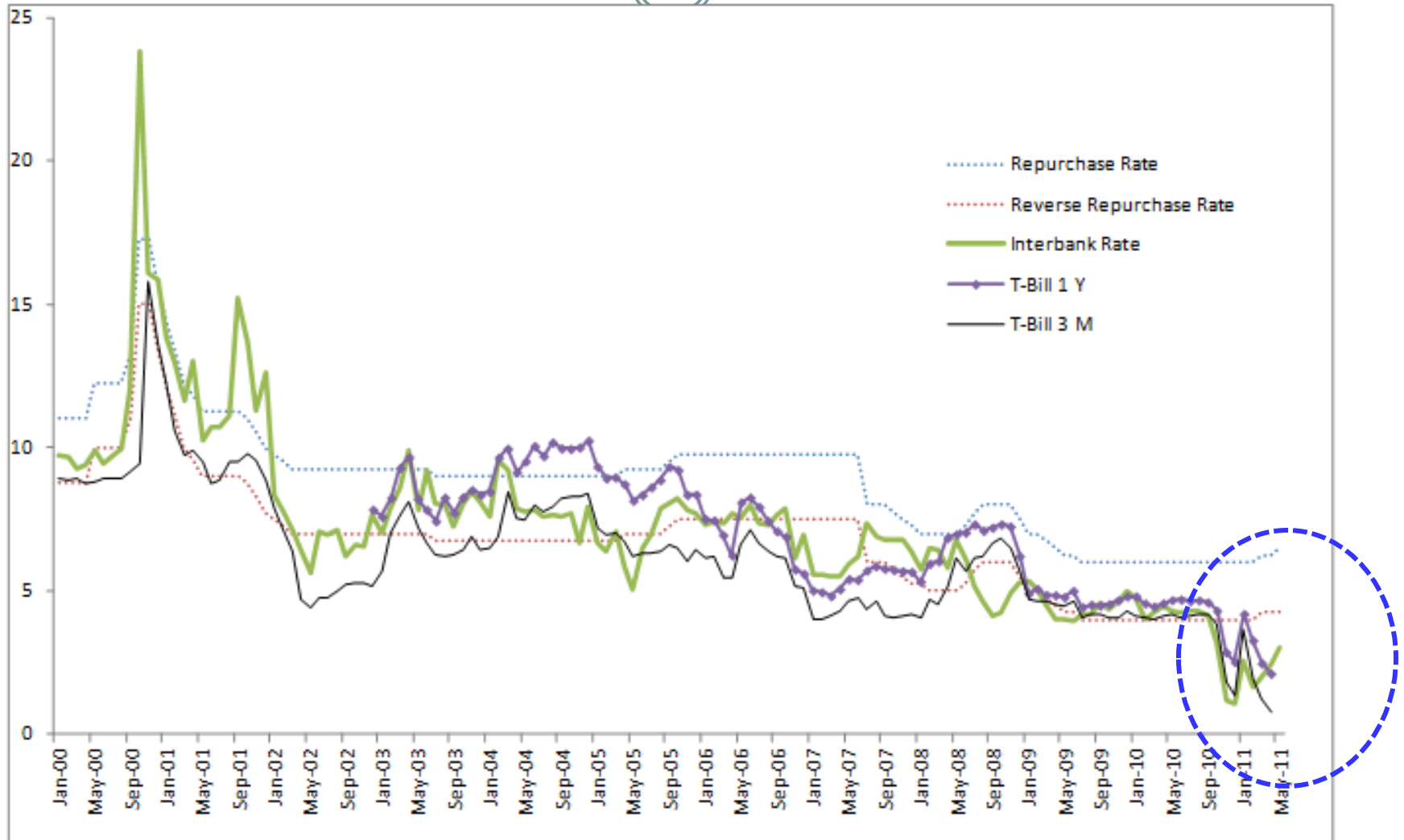
Outline

We assess:

- The persistence and volatility of the deviation of market rates from policy rates;

- The interest rate and credit channel of monetary policy; and

- The reasons for the divergence of policy rates from market rates and their policy implications.

The divergence of T-bill yields from policy rates has been persistent and volatile…

- Following Panigirtzoglu and others (Bank of England, 2000), we denote the divergence (d) = market interest rate – policy rates:

	dIB = Interbank-RRP	dTB = T bills – RRP
Long run mean of divergence = -α1/α2	0.56	-0.30
Speed of reversion = -α2	-0.37	-0.19

GARCH (1, 1) model

$$d_t - d_{t-1} = \alpha_1 + \alpha_2 d_{t-1} + \varepsilon_t$$

$$E(\varepsilon_t) = 0$$

$$E(\varepsilon_t^2 | \psi_{t-1}) = \sigma_t^2 = \beta_1 + \beta_2 \varepsilon_{t-1}^2 + \beta_3 \sigma_{t-1}^2$$

- The long run mean of T-bill (TB) yields is 0.30 percentage points below the policy rate while the interbank PHIBOR rate (IB) is 0.56 percentage points above.

- Deviations of market rates tend to persist over time in terms of levels and volatility, suggesting that the influence of the policy rate over the yield curve is uncertain, particularly over treasury securities.
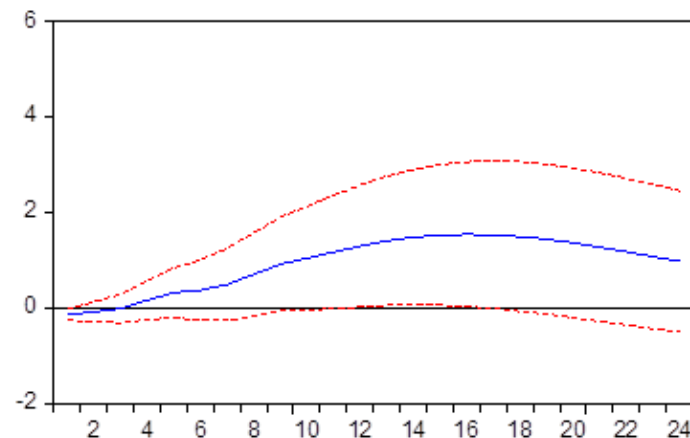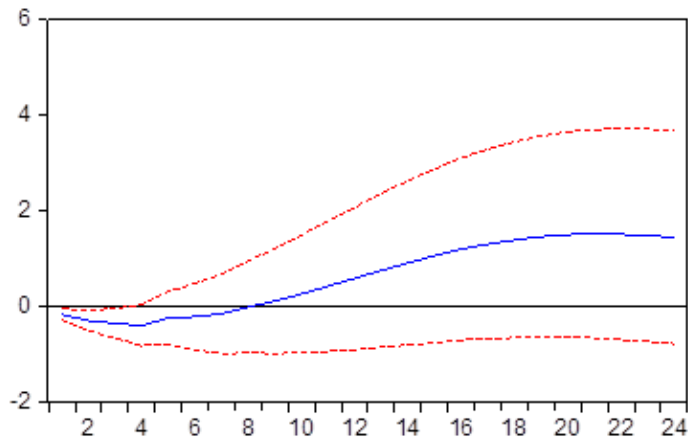
T-bill rates have a stronger influence over lending rates…
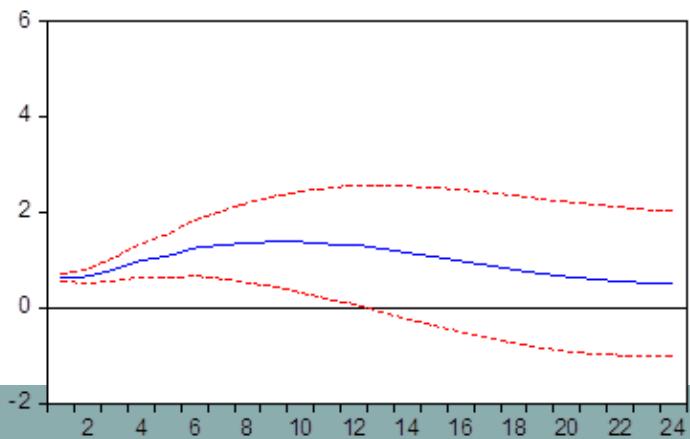*(VAR of US T-Bond 10Y, Policy Rates, 91-day T-bill, and Lending Rates)*

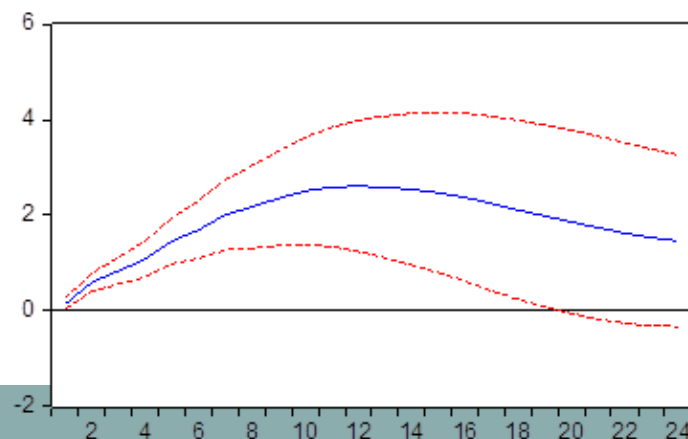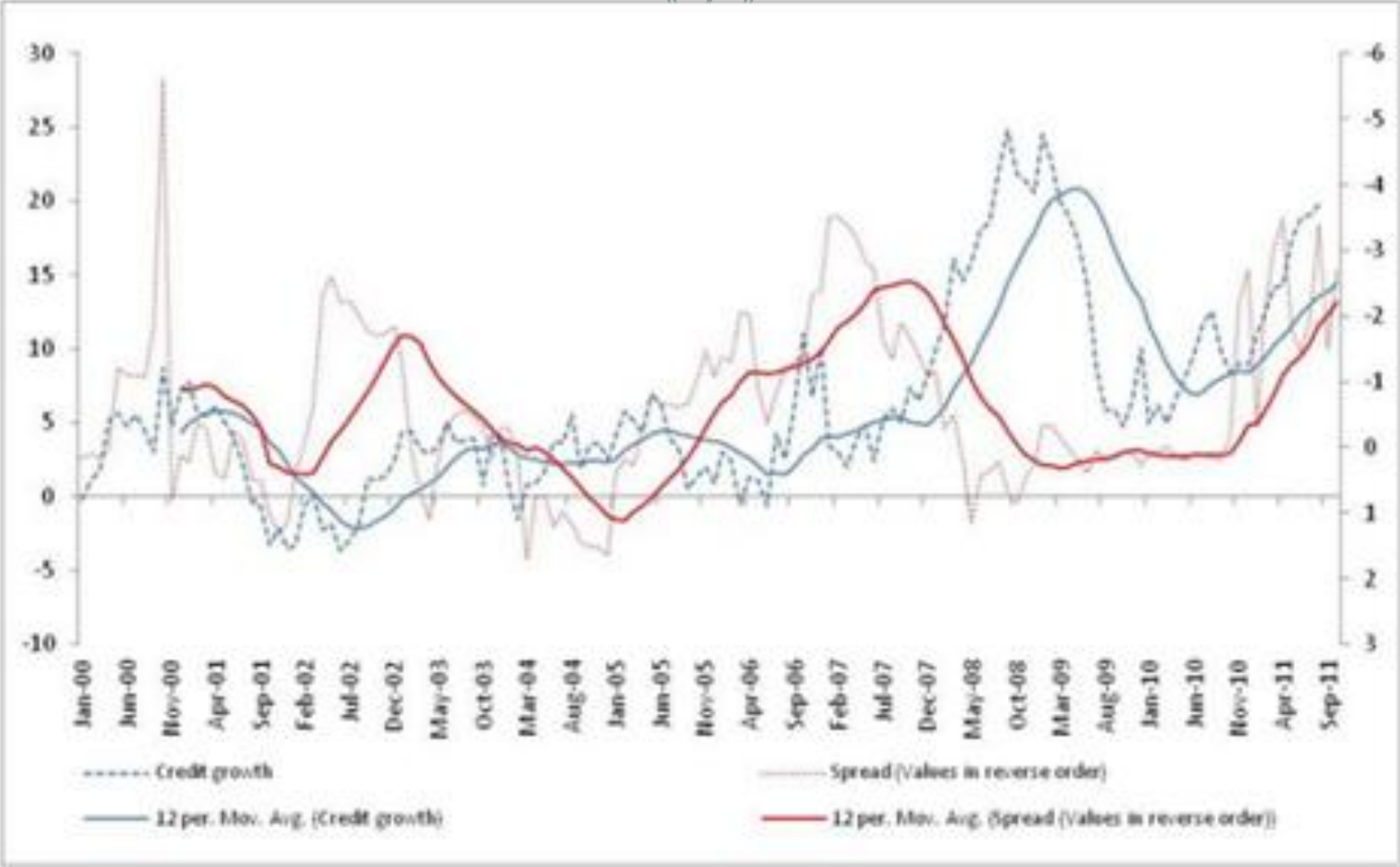Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.

And recent rapid credit growth appears to be related to the spread between t-bill yields and policy rates (a measure of lending conditions) and associated low real lending rates.

To more formally assess the impact of accommodative lending conditions, the paper estimates an extended Global Projection Model (GPM) using Bayesian techniques.

(1) The aggregate demand equation is as follows:

$$ygap_t = \beta_{ld}\,ygap_{t+1} + \beta_{lag}\,ygap_{t-1} - \beta_{RRgap}RRgap_{t-1} + \beta_{Zgap}zgap_{t-1} + \beta_{RWygap}ygap_t^{RW}$$
$$+ \beta_{BL}\eta_t + \varepsilon_t^{ygap}$$

where ygap is the output gap, RRgap the real interest rate gap, zgap the real exchange rate gap, ygap^{RW} the output gap in the United States, η is a measure of lending conditions (spread between the treasury bill rate or lending rate and the policy rate in basis points) specified in the aggregate demand equation.

(2) *The Philips curve equation is as follows:*

$$\pi_t = \alpha_{\pi ld}\pi4_{t+1} + (1-\alpha_{\pi ld})\pi4_{t-1} + \alpha_{ygap}ygap_{t-1} + \alpha_{zgap}(z_t - z_{t-1}) + \alpha_o(\pi_t^o - \pi^o) + \alpha_{olag}(\pi_{t-1}^o - \pi^o)$$
$$+ \alpha_f(\pi_t^f - \pi^f) + \alpha_{flag}(\pi_{t-1}^f - \pi^f) + \varepsilon_t^\pi$$

where is $\pi4_{t+1}$ the four-quarter ahead inflation rate (year/year), $\pi_t 4_{t-1}$ the four-quarter lagged inflation rate, π_t^o the international fuel inflation, and π_t^f International food inflation.

As an extension, we add the following equation for core inflation:

$$\pi_{c,t} = \alpha_{c,\pi ld}\pi4_{c,t+1} + (1-\alpha_{c,\pi ld})\pi4_{c,t-1} + \alpha_{c,ygap}ygap_{t-1} + \alpha_{c,zgap}(z_t - z_{t-1}) + \alpha_c(\pi4_{t-1} - \pi4_{c,t-1}) + \varepsilon_{c,t}^\pi$$

where the term $(\pi4_{t-1} - \pi4_{c,t-1})$ has been added to the simple inflation equation to allow for the possibility of relative price and real wage resistance (second-round effect); or more precisely that workers and other price setters may try to partially keep their prices rising in pace with movements in the headline CPI.

Extended GPM Model results

•   Lending conditions have a larger impact than policy rates on the output gap and thus headline inflation. The estimate of the impact of lending conditions on the output gap is 0.12 (1 percent point change in the spread raises the output gap by 0.12) percent compared to a coefficient of 0.06 for the policy rate.

•   Global fuel and food prices have a significant impact on headline inflation in the Philippines, depending on their respective weights in the CPI baskets and degree of pass-through of global prices to domestic prices.

•Significant second round effects may exist as the coefficient on the deviation of headline inflation from core inflation is high (0.67).
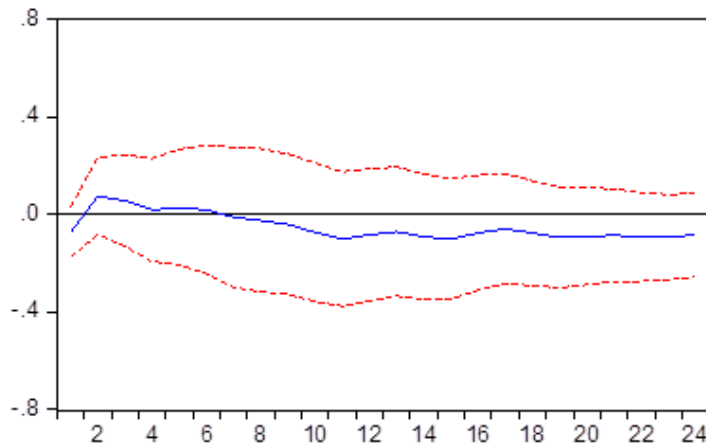
Portfolio inflows, treasury bond issuance, and excess reserves (RRPs and SDAs) have an influence on the spread.

(VAR of US T-Bond , Portfolio Flows , Government Bond Issuances , Excess reserves (SDA+RRP) and the Spread (91-day T-Bill-RRP))
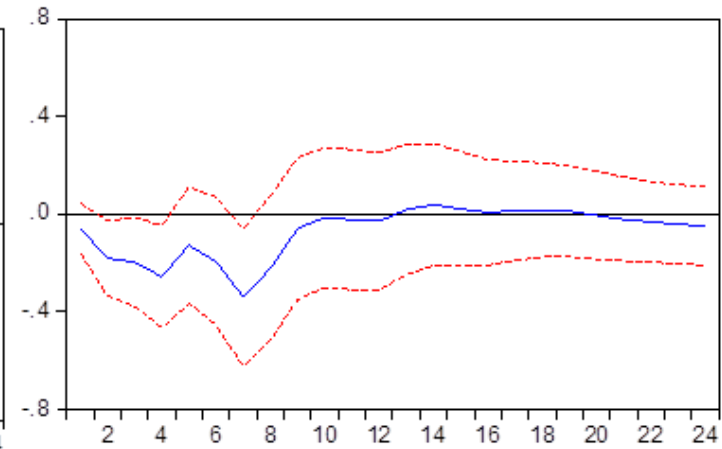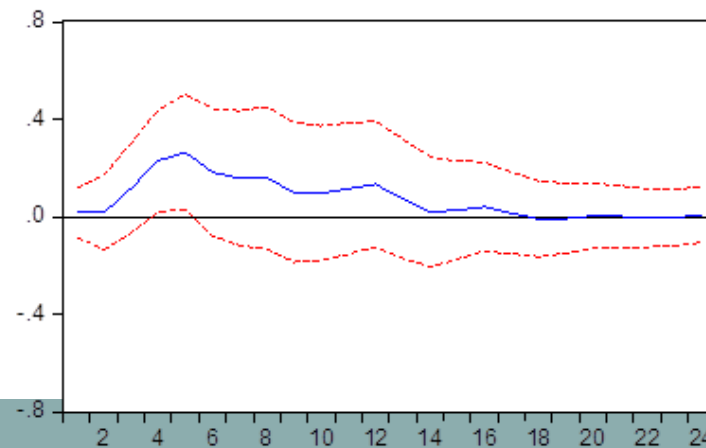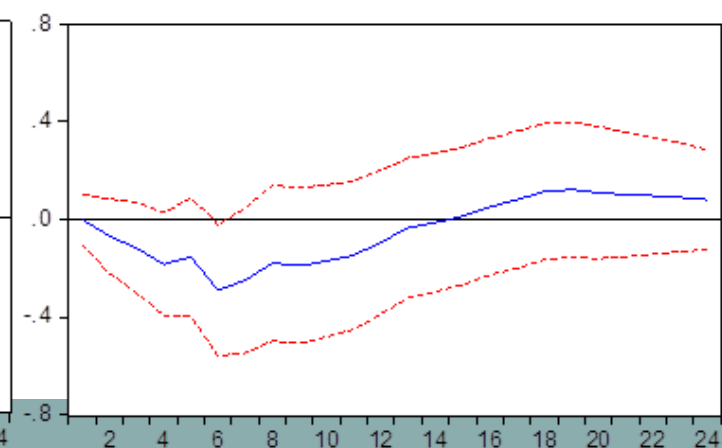
Response to Cholesky One S.D. Innovations ± 2 S.E.

Policy Implications

- The persistence and volatility of the negative spread between T-Bill and policy rate lessens the strength of the interest rate and credit channel of monetary policy because the T-bill rate has a stronger influence over deposit and lending rates.

- The negative spread (a measure of lending conditions) affects the real economy. As this impact is relatively large, it should be taken into account when evaluating the monetary stance and inflation forecast in order to avoid an overly-expansionary policy and overshooting of the inflation target if lending conditions are accommodative. Monetary conditions are currently more supportive of growth than implied by the policy rate alone.

- Portfolio inflows, excess reserves, and treasury issuances affect lending conditions.

- Coordination of monetary and fiscal policies also have a role to play in strengthening monetary policy effectiveness.