Foreign monetary policy expectations and domestic exchange rate behaviour

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Background

- The US economy has large impact on the global economy
- Technological innovation in the US and knowledge generation influences the global economy.
- US macroeconomic forces shape economic wellbeing of the world economy.
- The involvement of the US in the world economy means participation of large number of wealthy consumer and large number of workers.
- Therefore all this create demand for product and services produced around the world.
- During fixed exchange regime world currencies were fixed to the USD
- When currencies started floating countries continued keeping the USD as reserve currency.
- The culture of still persist to today

Literature review

- Mehrotra and Kozluk (2008) argued that monetary expansion in China result higher price level and real GDP in Asia.
- Kim (2005) found that in Canada after a shock in foreign monetary policy effect on the foreign exchange rate is experience after a lengthy period.

Methodology

- Theoretical basis can be traced back seminal work by Svensson and van Wijnbergen (1989).
- Assume that both countries produce two aggregate goods
- At each time t where $(t = t - n \dots, t, \dots t + n)$, each country has a consumer representing it, on each time period aggregate production is given by Y_t and Y_t^*.
- Assume world population is 2 which makes world production of these two goods $2Y_t$ and $2Y_t^*$(production of these products is costless up to this level) , all goods produced are consumed there cannot be preserved between any two or more periods.
- Therefore, if a shortage arises the market is characterized underemployment

Methodology

- $H_t = \gamma_t H_{t-1}\ and\ F_t^* = \gamma_t^* F_{t-1}^*$
- domestic and foreign monetary policy expansion gross rate are denoted by γ_t and γ_t^* respectively
- $Y_t \leq y_t\ and\ Y_t^* \leq y_t^*$
- domestic and foreign monetary policy expansion gross rate are denoted by γ_t and γ_t^* respectively
- $Y_t \leq y_t\ and\ Y_t^* \leq y_t^*$
- $Exp_t \sum_{T=t}^{\infty} \alpha^{T-t}\, U\left(\delta_{H_t}, \delta_{F_t}\right), 0 < \alpha < 1.$

Methodology

- Suppose that in R_t a foreign country undertakes expansionary monetary policy and the domestic consumer learns of the policy being undertaken at that time he/she receives money from domestic transfers and from foreign money transfers.
- $P_{H_t}\delta_{H_t} \leq H_{t-1} + (\gamma_t - 1)H_{t-1}\varrho_{H_t-1}$
- and
- $P_{F_t^*}\varrho_{F_{t-1}^*} \leq F_{t-1}^* + (\gamma_t^* - 1)F_{t-1}^*\varrho_{F_{t-1}^*}$

Methodology

- $\gamma_{H_t} \leq Y_t \; and \; \gamma_{F_t^*} \leq Y_t^*$
- The customers of assets engage on the sale of these assets subject to budget constraint.
- $H_t + \xi_t F_t^* + \Gamma_{H_t} \partial_{H_t} + \Gamma_{F_t^*} \partial_{F_t^*} + \phi_{H_t} \varrho_{H_t} + \phi_{F_t^*} \varrho_t^* \leq \left[H_{t-1} + \right.$

Methodology

- . Therefore, the equilibrium condition for asset, goods and money market is defined as
- $\delta_{H_t} = \delta^*_{H_t} = Y_t \leq y_t \; and \; \delta_{F^*_t} = \delta^*_{F^*_t} = Y^*_t \quad (A)$
- $H_t = H^*_t = \grave{H}_t \; and \; F_t = F^*_t = \grave{F}_t \qquad (A')$
- $\partial_{H_t} = \partial_{F_t} = \partial^*_{H_t} = \partial_{F^*_t} = \varrho_{H_t} = \varrho_{F^*_t} = \varrho_{H^*_t} = \varrho_{F^*_t} = 1 \qquad (A^{"})$
- The total number of asset held is normalized to 2, while the total number of output held in both domestic and foreign country is $2Y_2$ and $2Y^*_t$.

methodology

- Following Nzimande and Msomi (2016) we decompose the variable into negative and positive component, beginning with a given time series component $\{A_t\}_{t=0}^{T}$ the series is decomposed into initial partial process.
- $A_t = A_0 + A_t^+ + A_t^-$
- A_0 represents values occurring in the beginning
- $A_t^+ \begin{cases} \Delta A_t^+ \; if \; \Delta A_{t-1} > 0 \\ 0 \; if \; \Delta A_{t-1} < 0 \end{cases}$
- and
- $A_t^- = \begin{cases} \Delta A_t^- \; if \; \Delta A_{t-1} > 0 \\ 0 \; if \; \Delta A_{t-1} < 0 \end{cases}$

Methodology

- $l_t = \emptyset_0 A_{1t}^{+} + \emptyset_1 A_{1t}^{-} + \emptyset_2 A_{2t}^{+} + \emptyset_0 A_{2t}^{-}$
- If we suppose there is only one component of the series that emerges in the cointegrating relationship (A), this will be indicating a cointegrating relationship in one direction such that
- $A_{1t}^{+} = \emptyset^{+} A_{2t}^{+} + l_{1t} \qquad t = 1, \dots, T$
- $A_{1t}^{-} = \emptyset^{-} A_{2t}^{-} + l_{2t} \qquad t = 1, \dots, T$

Estimating results

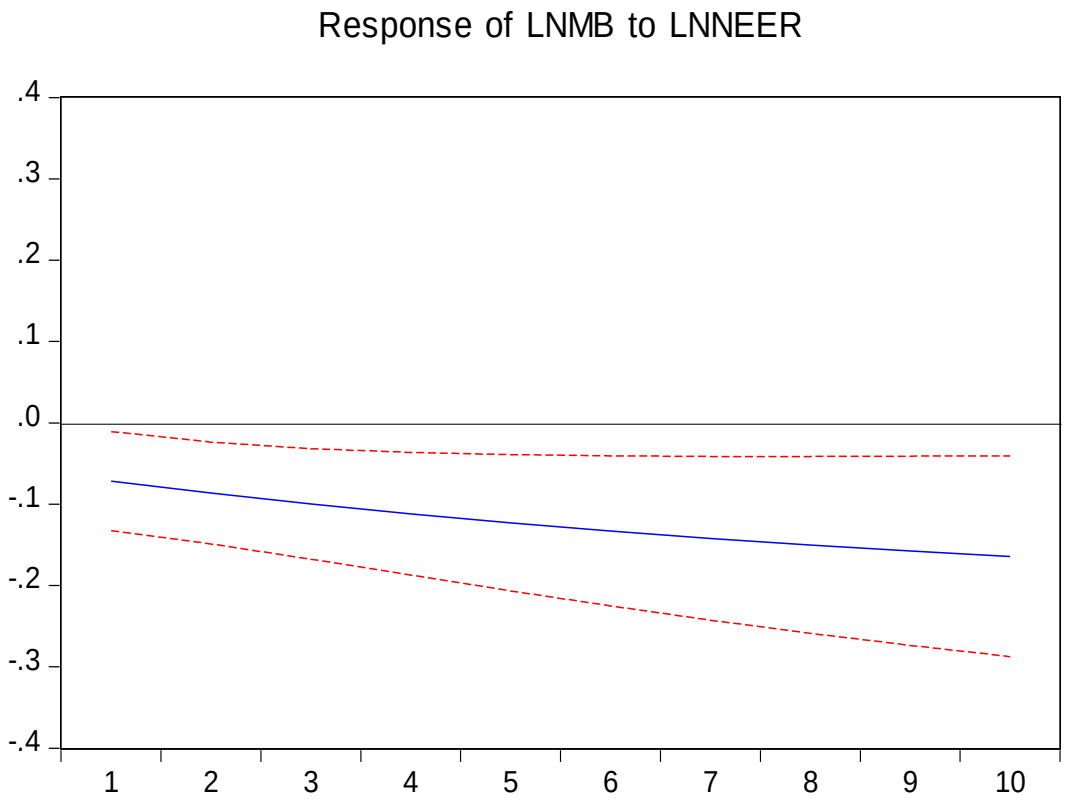
	ADF				PP	
variable	intercept and trend		intercept	intercept and trend		intercept
cpi	0.6556		2.7314	0.967		3.2987
iblr	-0.34799		2.0481	2.1181		1.742
mb	1.5904		0.0167	1.4438		0.2117
neer	1.8754		2.77928*	1.9399		2.8043*
op	1.8019		1.3897	2.0782		1.5763
rgdp	2.8811		0.623	4.9498		0.0842

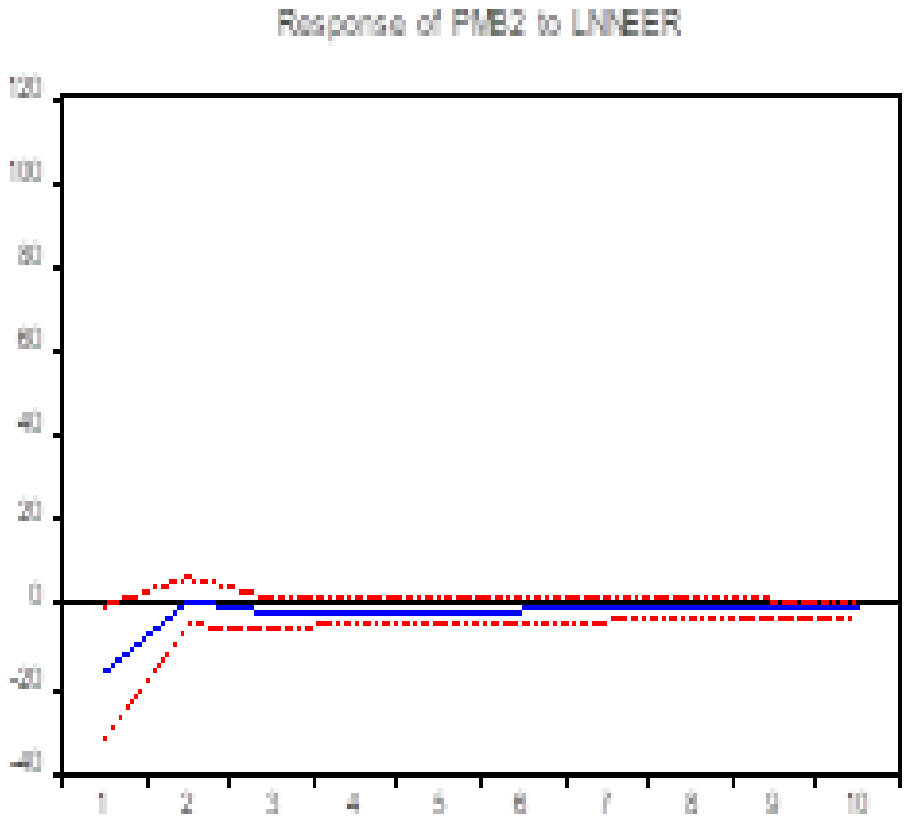
Table shows unit root test where variable are at levels, ADF and PP test are used where *, ** and * respectively stand for significant at 1%, 5% and 10%.**

			Unit root test			
	ADF				PP	
variable	intercept and trend		intercept	intercept and trend		intercept
lncpi	3.7945**		2.4619	4.1901		3.4224**
iblr	-0.34799		2.0481	2.1181		1.742
lnmb	1.8686		0.4914	1.6685		0.3136
lnneer	2.67		1.2141	2.4904		1.2185
lnop	2.293		1.5972	2.1022		1.3217
lnrgdp	1.5323		0.9711	4.1161		0.4152

Table shows unit root test for logged variables where variable are at levels, ADF and PP test are used where *, ** and * respectivly stand for significant at 1%, 5% and 10%.**

Estimation results





Estimation results