

Strengthening Resilience Through Country Risk Assessment



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FACULTY OF
BUSINESS AND LAW



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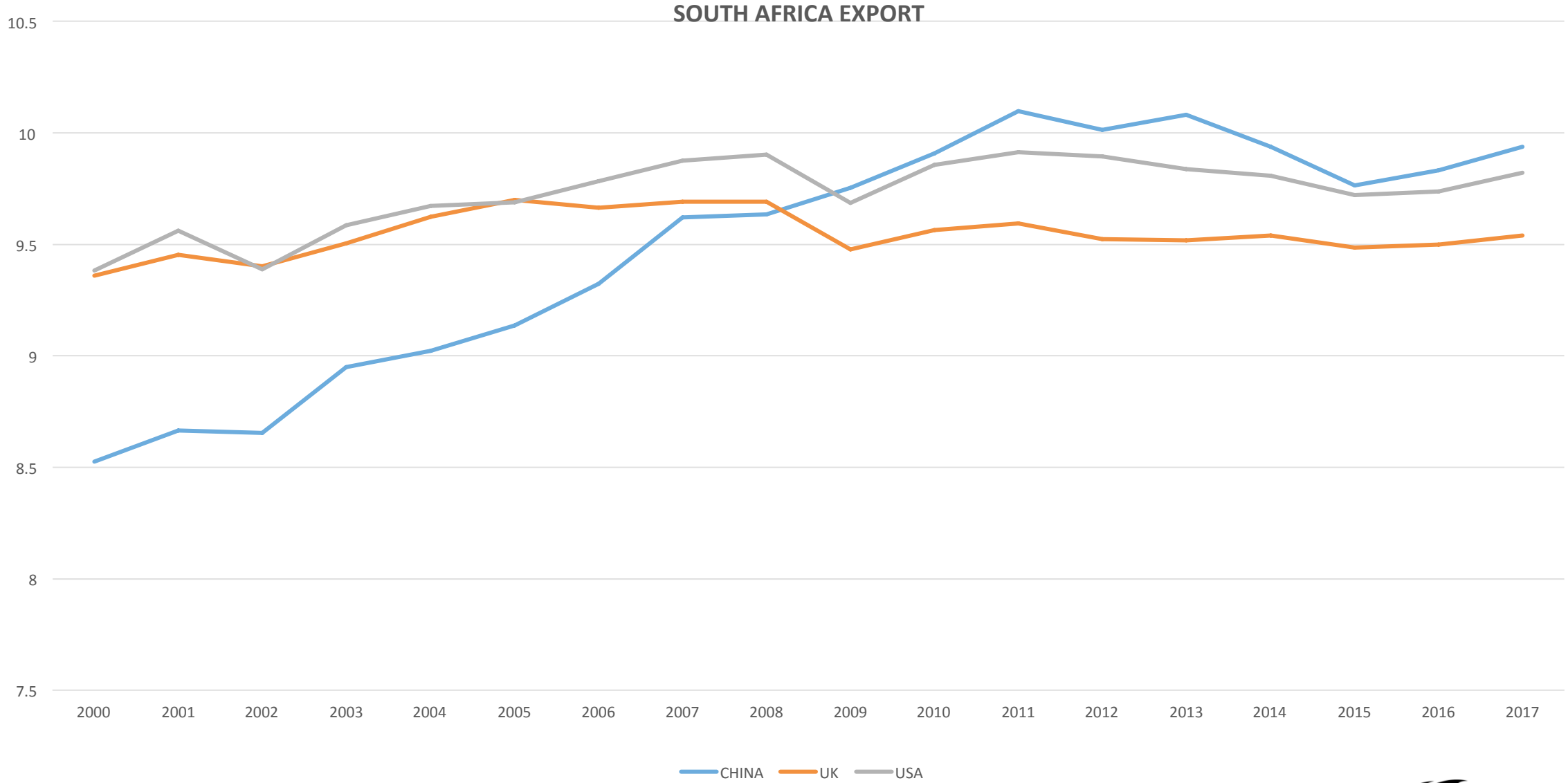
10-13 July, 2018

Outline of Presentation

- ❖ Background to the study
- ❖ Methodology and Data
- ❖ Empirical Results
- ❖ Conclusions and Policy Implications

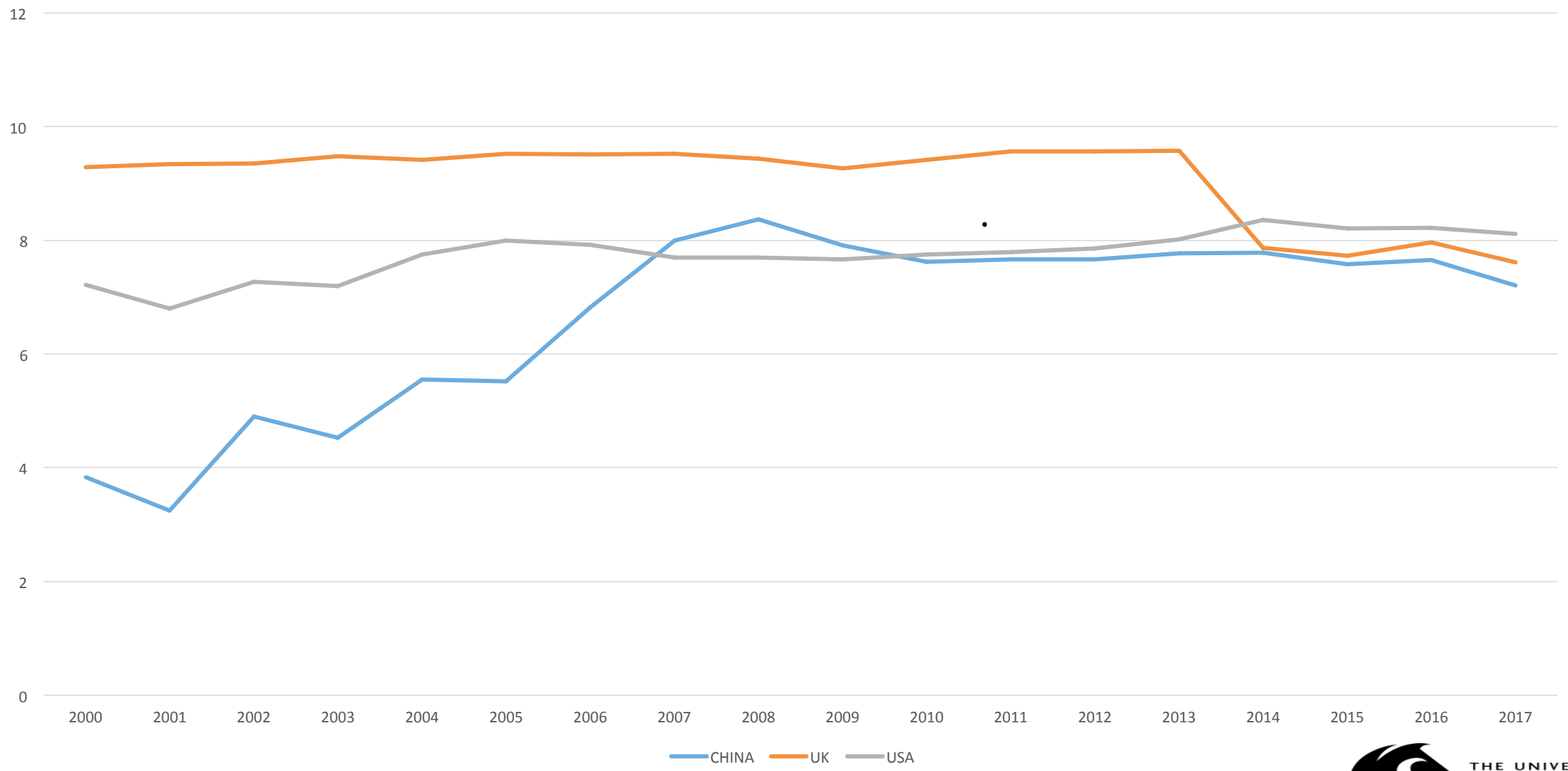
Background of the study

- ❖ This paper investigates the impact of aggregate monetary shock of China, U.K and U.S.A on Botswana and South Africa economy.
- ❖ In the 2018 Global economic outlook report, China, U.S.A and the Eurozone are the major forces behind the global economic growth (IMF, 2018).
- ❖ Given the trend of export from Botswana and South Africa to China, U.K and U.S.A, it is likely that the monetary policies of these global economic giants could affect the macroeconomic fundamentals in Botswana and South Africa.



Background Cont'd

BOTSWANA EXPORT

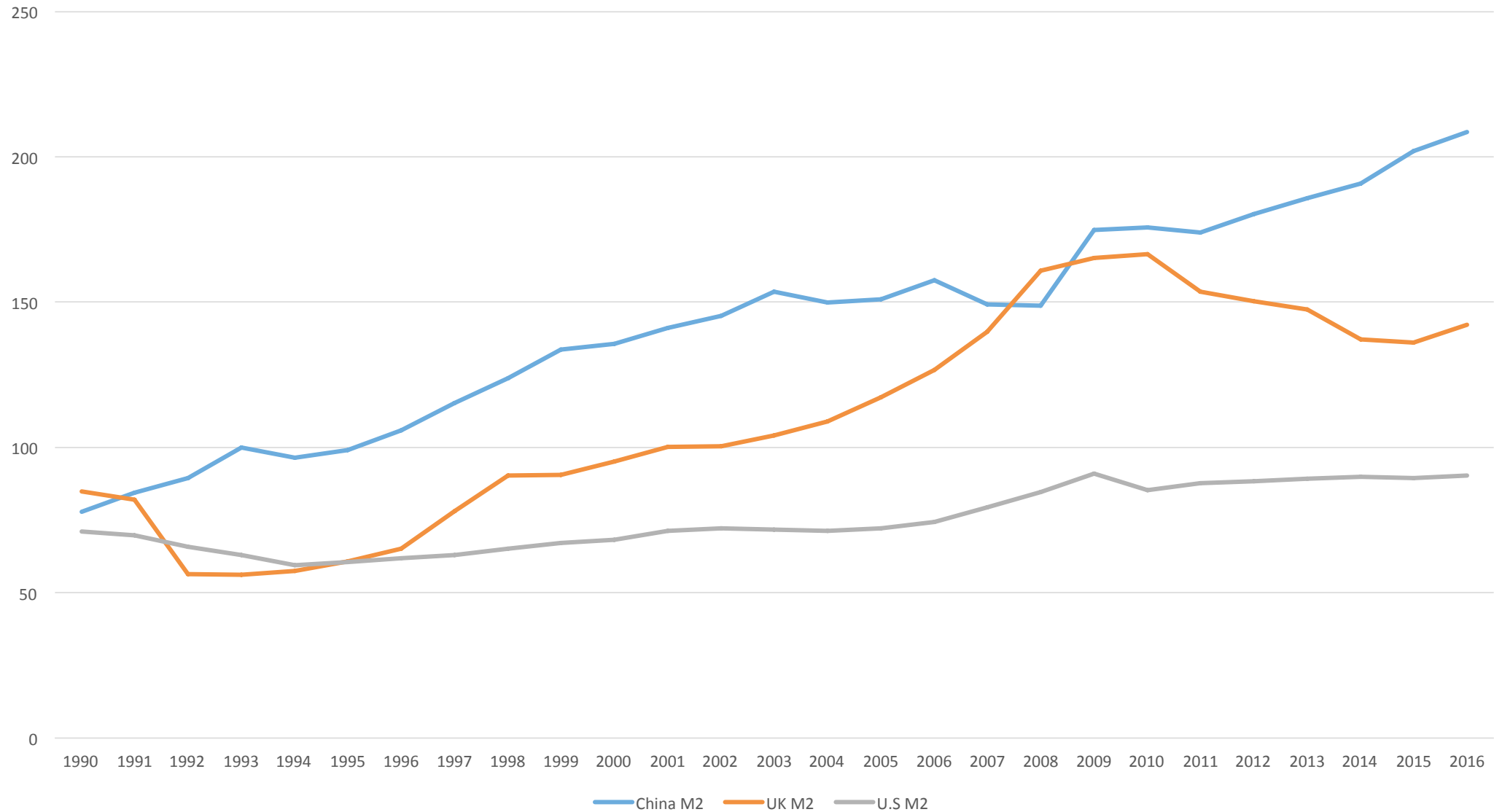


Background Cont'd

- ❖ This study is important given the recent increase in the global monetary aggregate (Vespignani, 2015).
- ❖ Given the substantial and unprecedented expansion in monetary supply in China, U.S and U.K (see Figure 3) raises an important question about how monetary expansion in these economies could affect the economy of Botswana and South Africa.

Background Cont'd

Monetary Aggregate M2



Background Cont'd

- ❖ Does an international monetary expansion have positive or negative effects on the economy of Botswana or South Africa?
- ❖ Does the origin of the monetary expansion matters?

Methodology

- ❖ This study follows Christiano et al (1996), Vespignani (2015) and Kim (2001)
 - Structural VAR was used for the estimation

- ❖ Following Dedola et al. (2005), the identification method used relies on the recursiveness assumption
 - It is simple which makes it natural starting point

- ❖ Following Vespignani (2015), international monetary aggregates (China M2, US M2 and UK M2) was ordered first followed by GDP, Consumer Price Index, Real interest rate, Monetary aggregate and the Nominal exchange rate

- ❖ The data are yearly data from 1990-2016

- ❖ **Endogenous Variables**

 - International Monetary Aggregate (China M2, USA M2, UK M2)

- ❖ **Domestic Macroeconomic variables**

 - GDP, Consumer Price Index (CPI), Real interest rate (RR), Money supply (M2), Nominal exchange rate (NEER)

- ❖ **Exogenous Variables**

 - China GDP, US GDP , UK GDP

- ❖ All the data were sourced from World Bank (2016), WDI

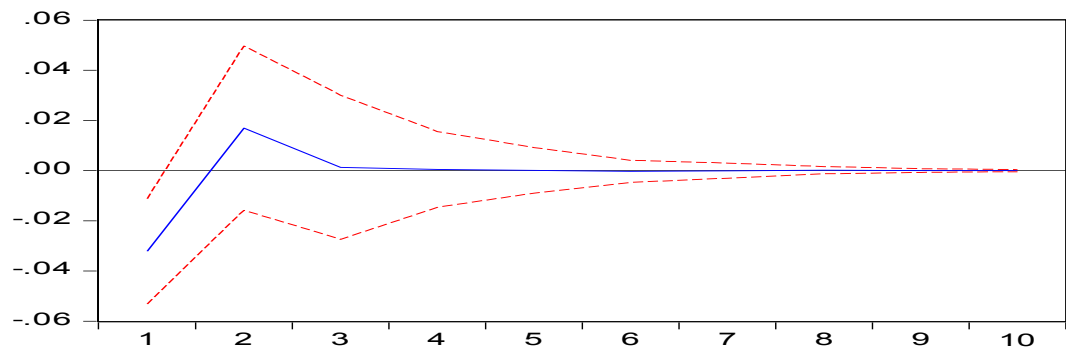
Stationarity Tests

| Endogenous Variables | Levels | | First Difference | |
|----------------------------|-----------|-----------|------------------|-----------|
| | ADF | PP | ADF | PP |
| Ln (US M2) | 0.099 | -0.242 | -3.376** | -3.312** |
| Ln (UK M2) | -3.325** | -3.325** | -9.245*** | -8.461*** |
| Ln (China M2) | -1.752 | -2.907* | -5.181*** | -5.294*** |
| Ln (Botswana M2) | -1.495 | -1.484 | -4.960*** | -4.968*** |
| Ln (Botswana CPI) | -3.061 | -3.025 | -5.105*** | -4.033*** |
| Ln (Botswana NEER) | 1.541 | -1.515 | -3.439** | -3.344** |
| Ln (Botswana GDP) | -0.533 | -3.881 | -5.907*** | -9.200*** |
| Ln (Botswana RR) | -4.316*** | -3.909*** | -3.803** | -6.688*** |
| Ln (South Africa M2) | -0.640 | -0.784 | -3.407** | -3.407** |
| Ln (South Africa CPI) | -1.309 | -3.125** | -3.653** | -3.418** |
| Ln (South Africa NEER) | -1.518 | -1.515 | -3.290** | -3.178** |
| Ln (South Africa GDP) | 0.345 | 0.158 | -2.993** | -2.838* |
| Ln (South Africa RR) | -1.460 | -2.307 | -7.370*** | -7.154*** |
| Exogenous variables | | | | |
| Ln (US GDP) | -2.669* | -2.701* | -5.026*** | -6.604*** |
| Ln (UK GDP) | -0.842 | -0.790 | -3.294** | -3.310** |
| Ln (China GDP) | -3.963*** | -3.956*** | -5.725*** | -8.297*** |

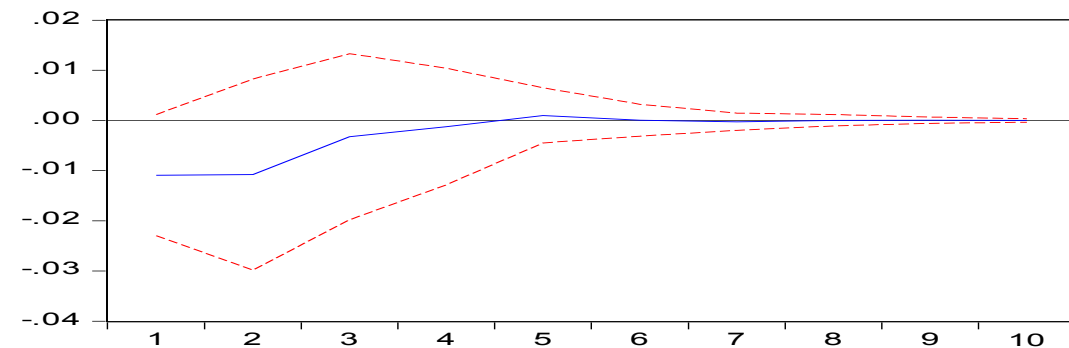
Empirical Results (China's monetary shock to Botswana)

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

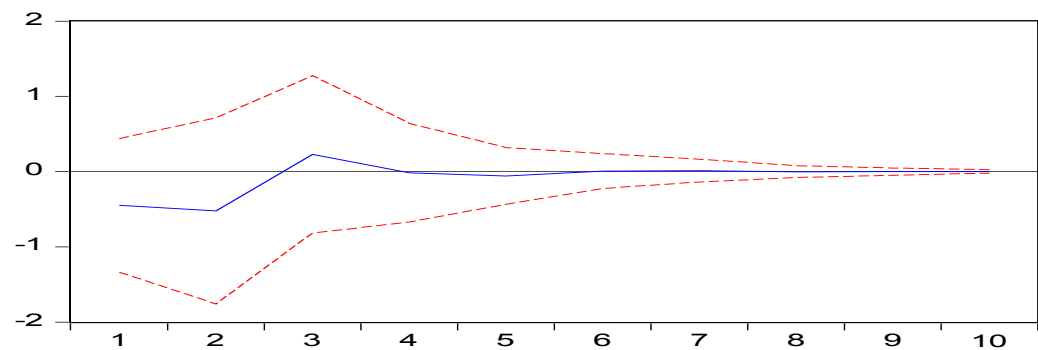
Response of LLBSGDP to LLCHIM2



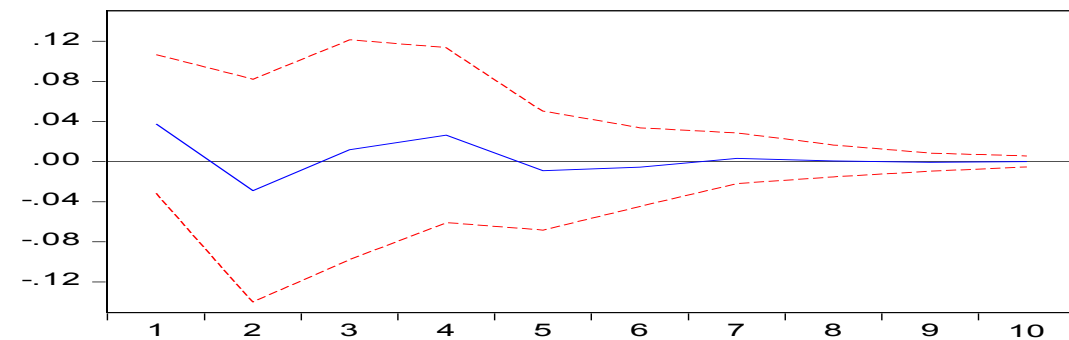
Response of LLBSCPI to LLCHIM2



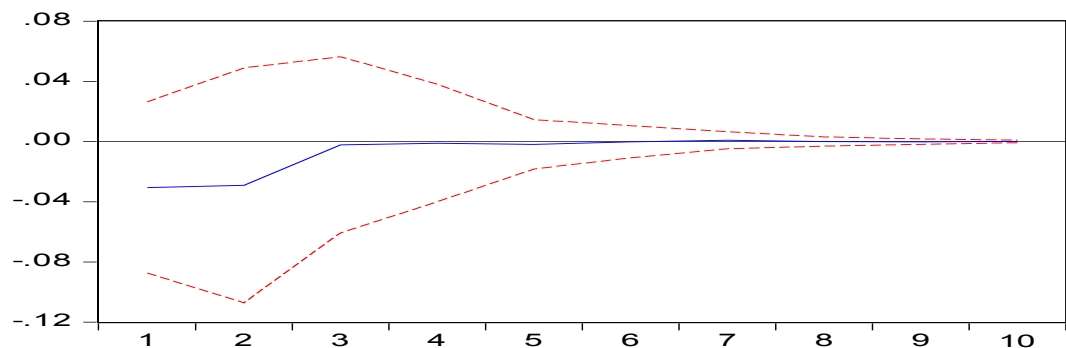
Response of LLBSRR to LLCHIM2



Response of LLBSM2 to LLCHIM2



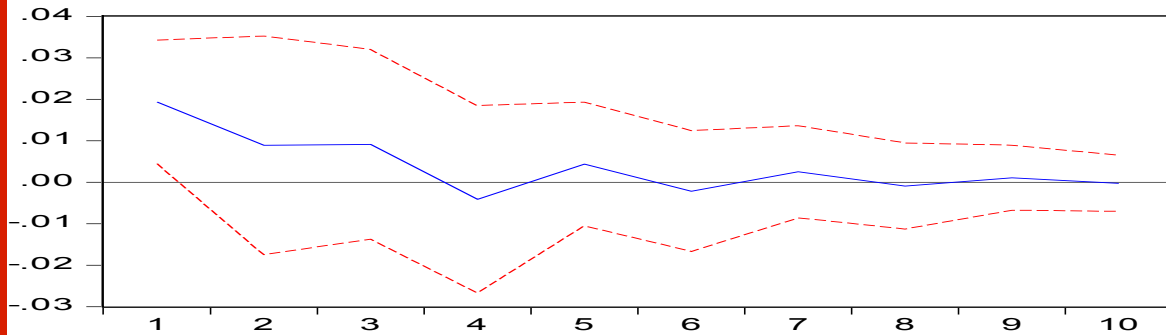
Response of LLBSNEER to LLCHIM2



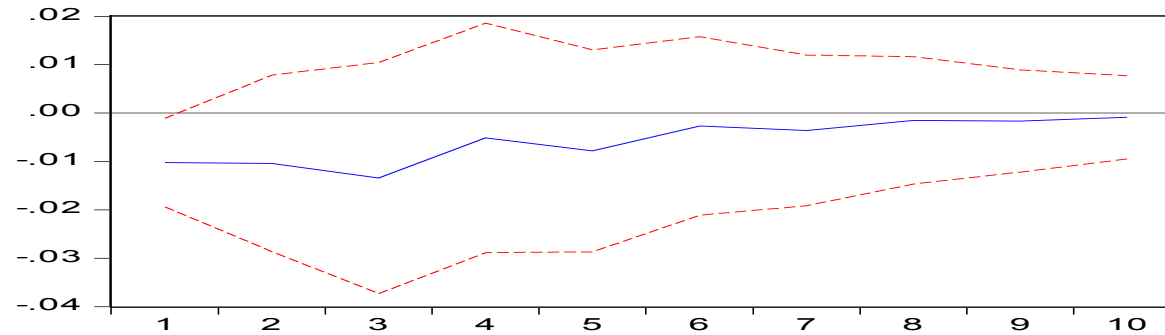
US monetary shock to Botswana

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

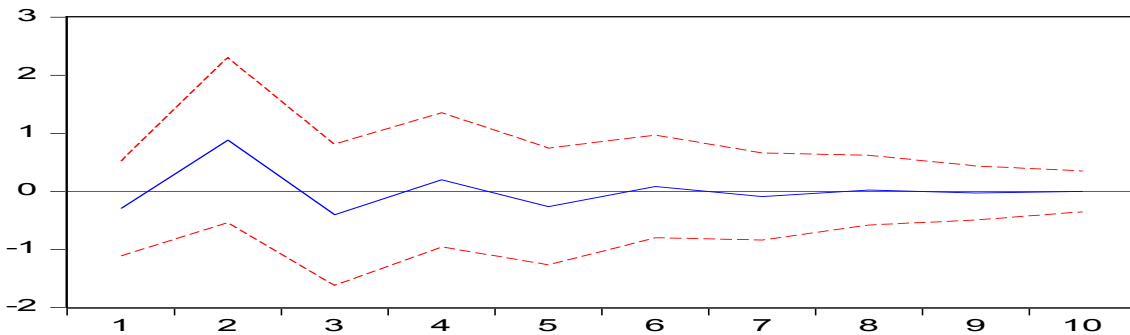
Response of LLBSGDP to LLUSM2



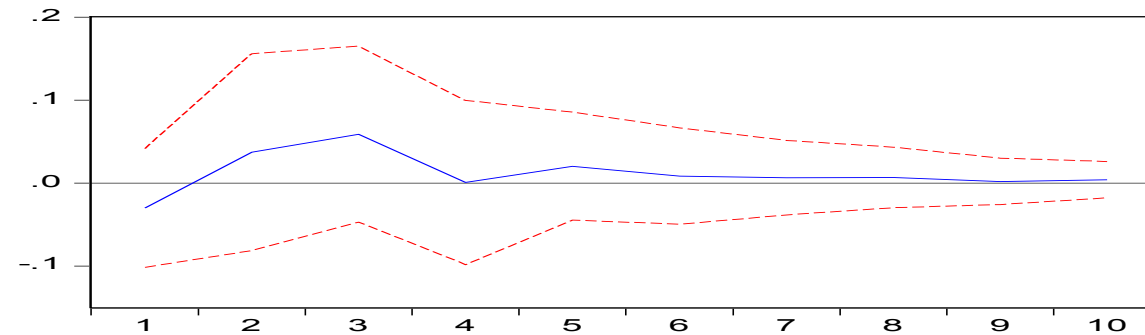
Response of LLBSCPI to LLUSM2



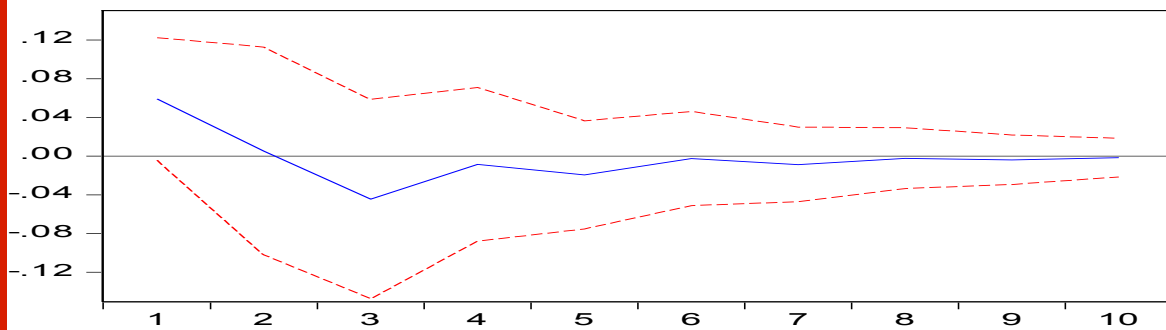
Response of LLBSRR to LLUSM2



Response of LLBSM2 to LLUSM2



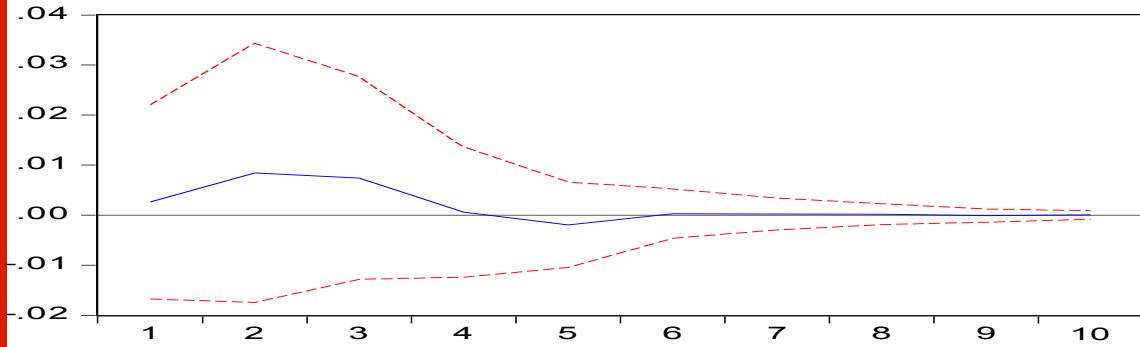
Response of LLBSNEER to LLUSM2



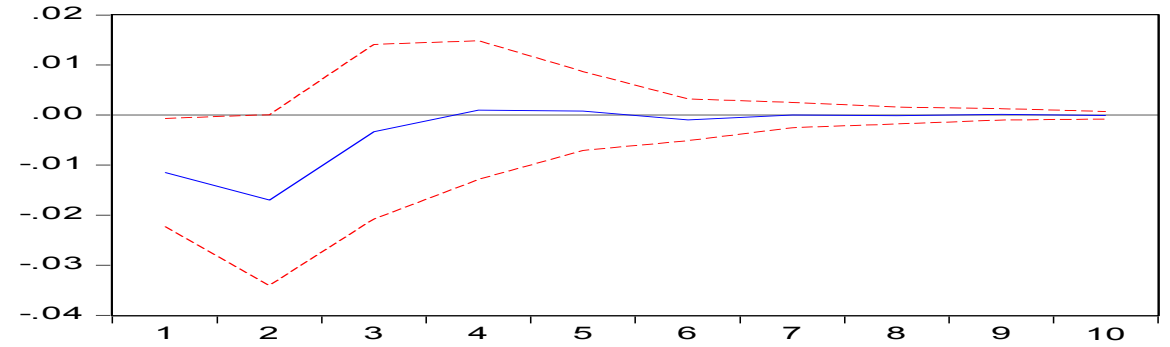
UK monetary shock to Botswana

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

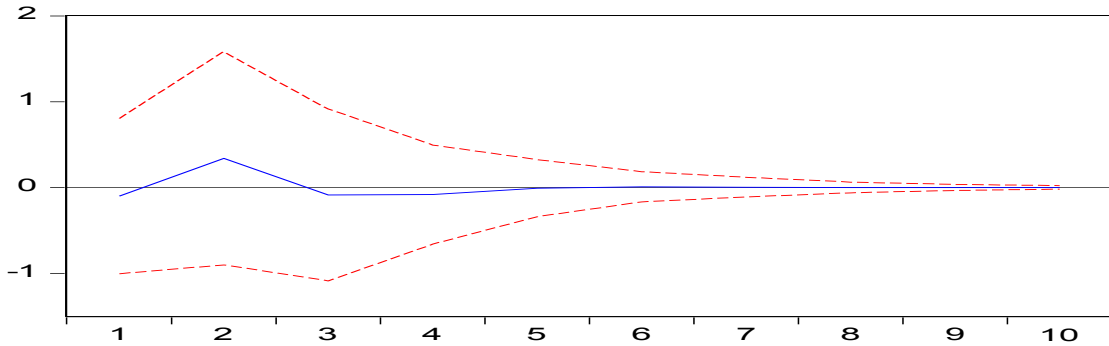
Response of LLBSGDP to LLUKM2



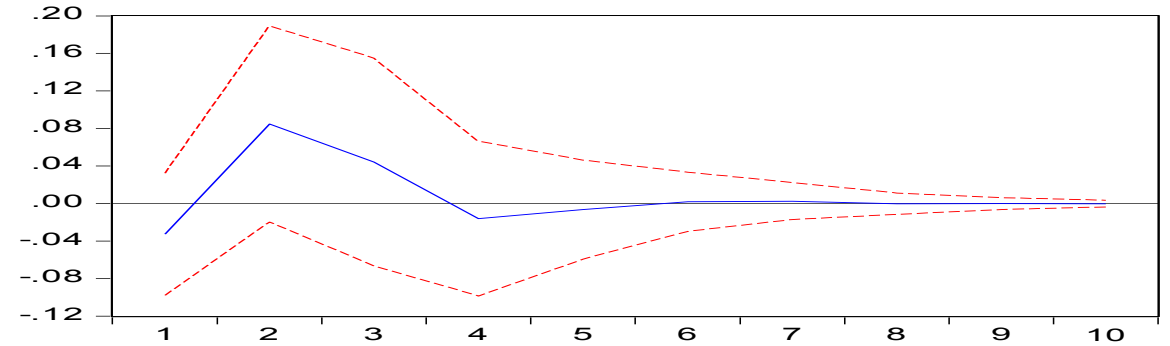
Response of LLBSCPI to LLUKM2



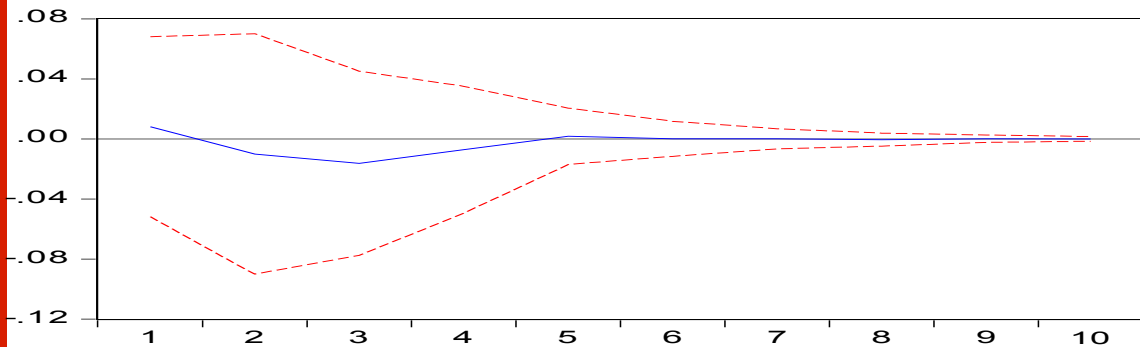
Response of LLBSRR to LLUKM2



Response of LLBSM2 to LLUKM2



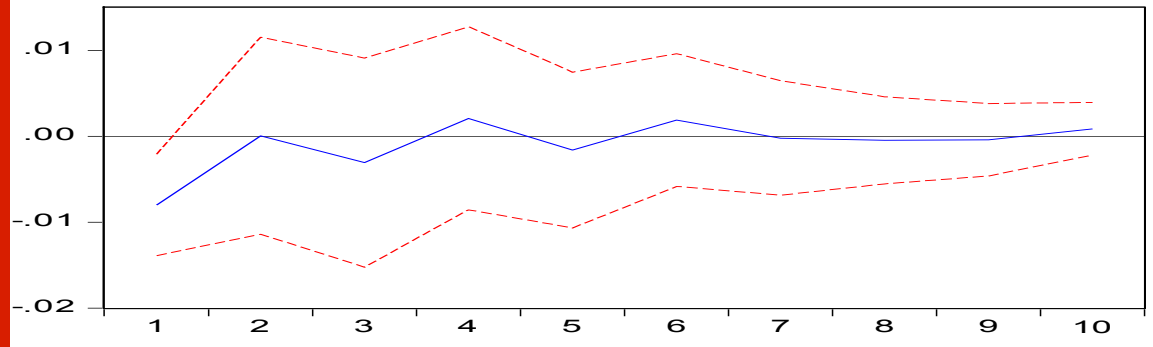
Response of LLBSNEER to LLUKM2



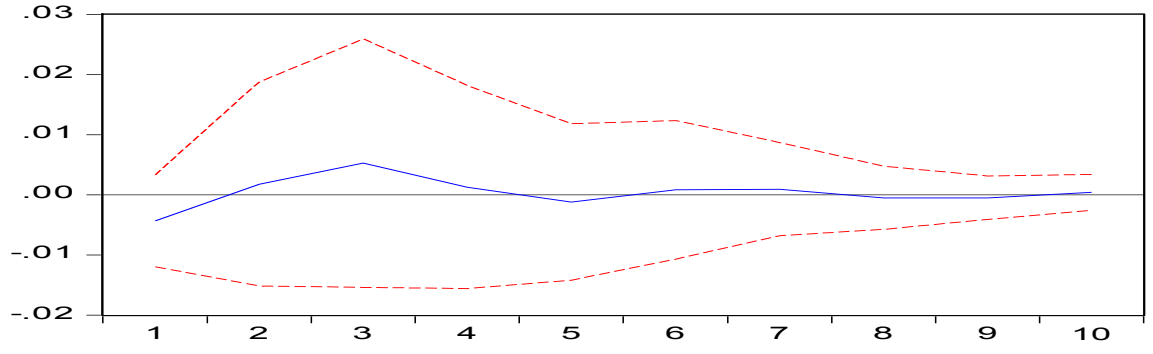
China's monetary shock to South Africa

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

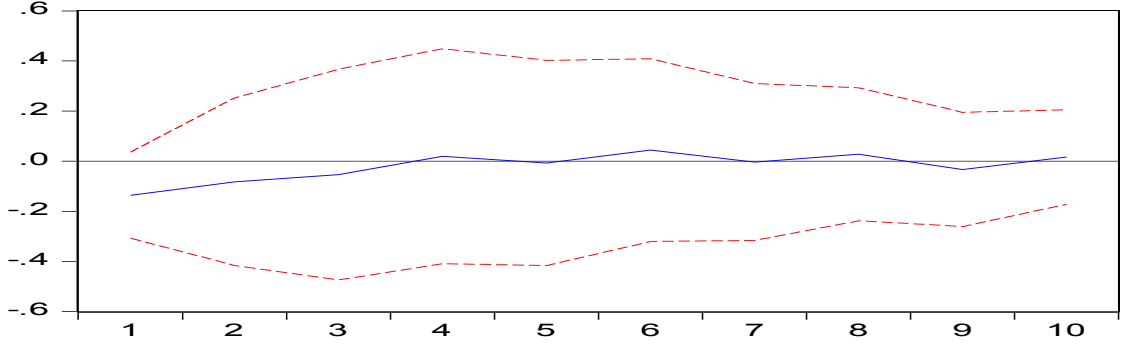
Response of LLSAGDP to LLCHIM2



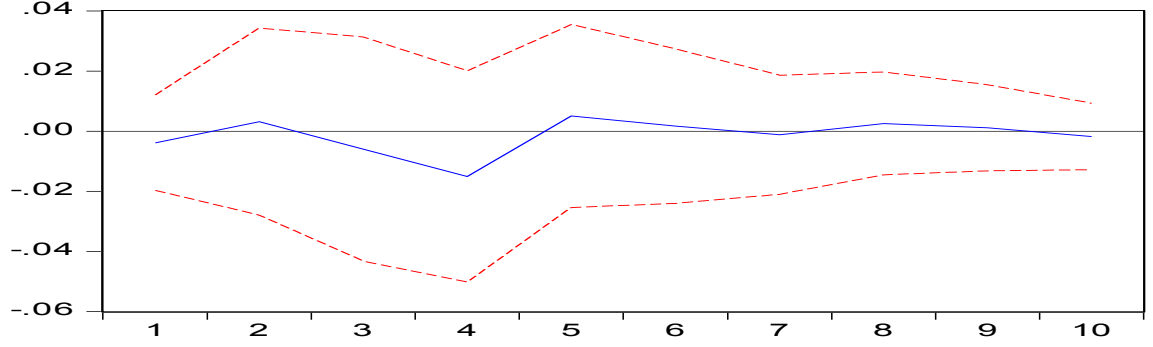
Response of LLSACPI to LLCHIM2



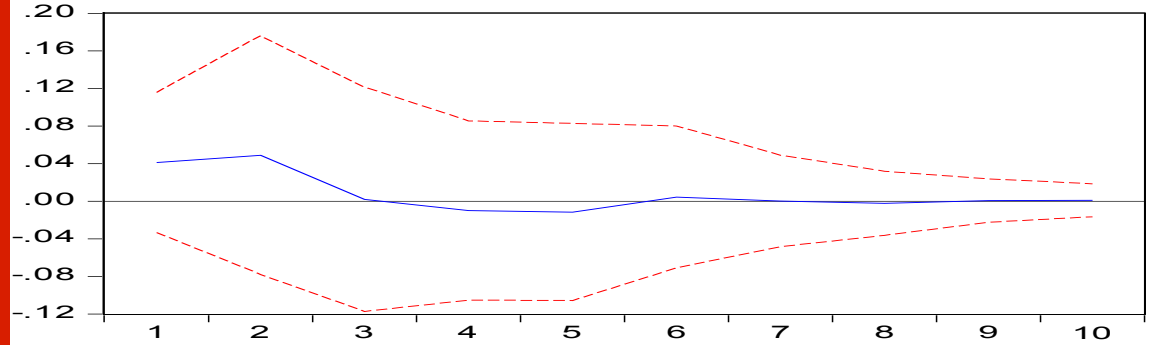
Response of LLSARR to LLCHIM2



Response of LLSAM2 to LLCHIM2



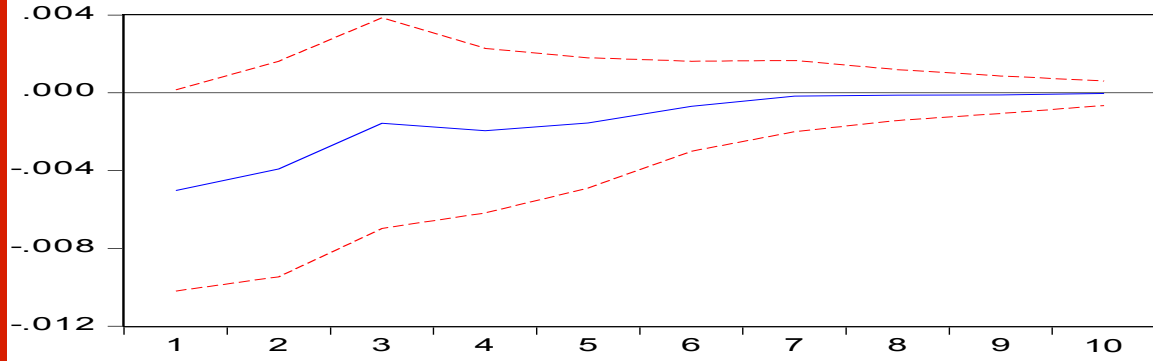
Response of LLSANEER to LLCHIM2



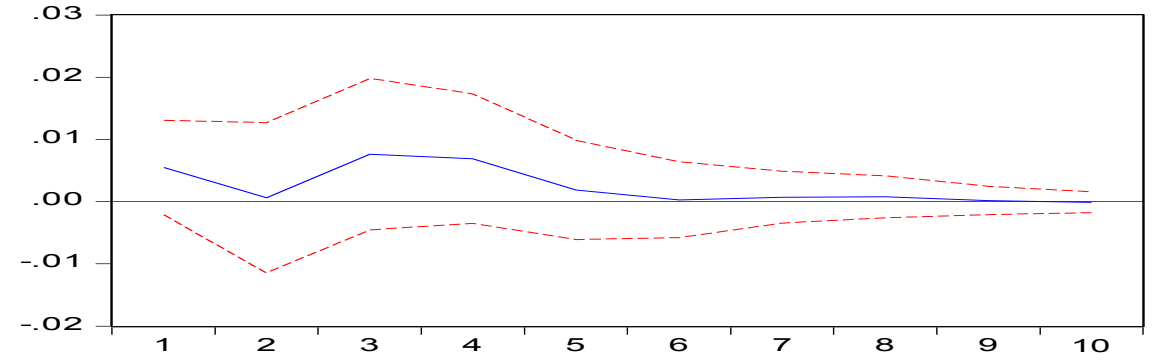
US monetary shock to South Africa

Response to Cholesky One S.D. Innovations \pm 2 S.E.

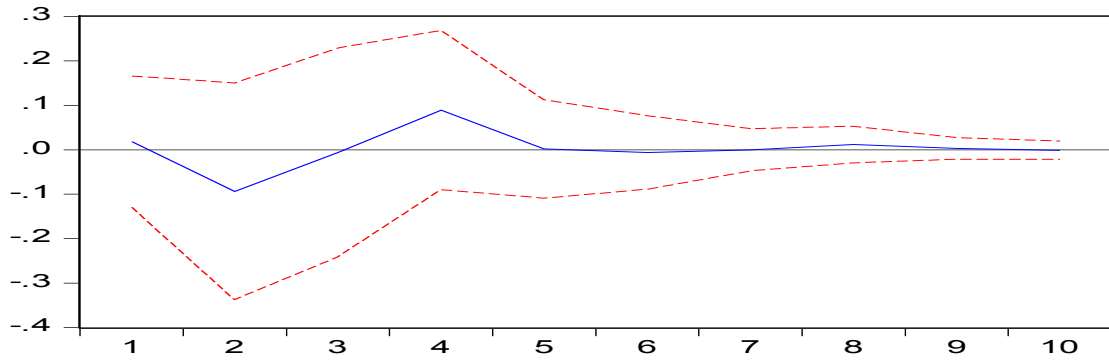
Response of LLSAGDP to LLUSM2



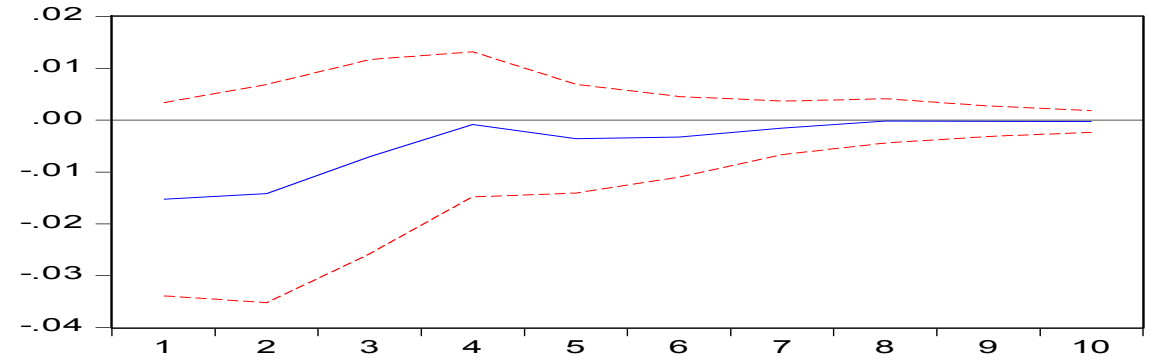
Response of LLSACPI to LLUSM2



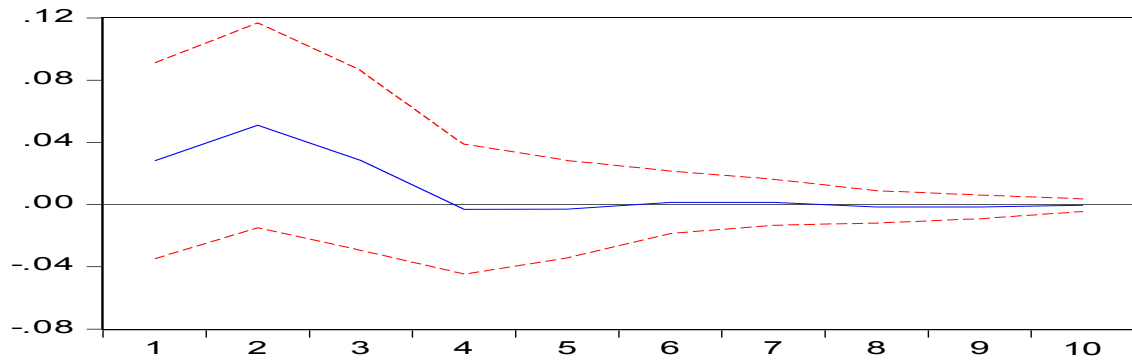
Response of LLSARR to LLUSM2



Response of LLSAM2 to LLUSM2



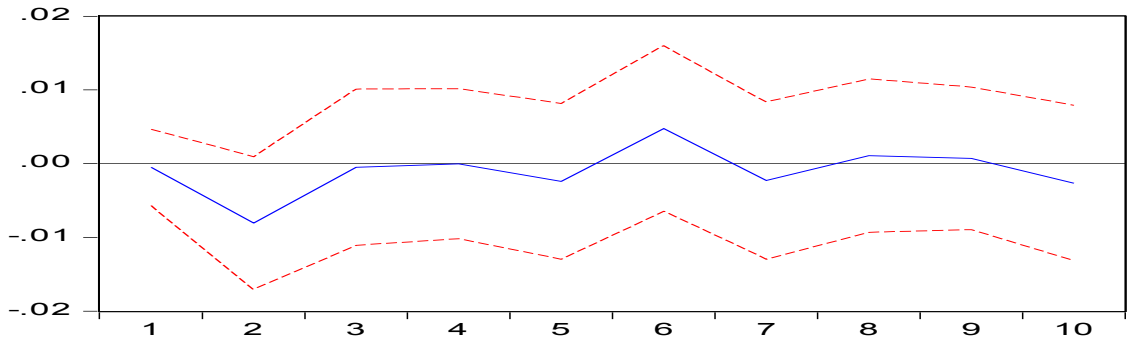
Response of LLSANEER to LLUSM2



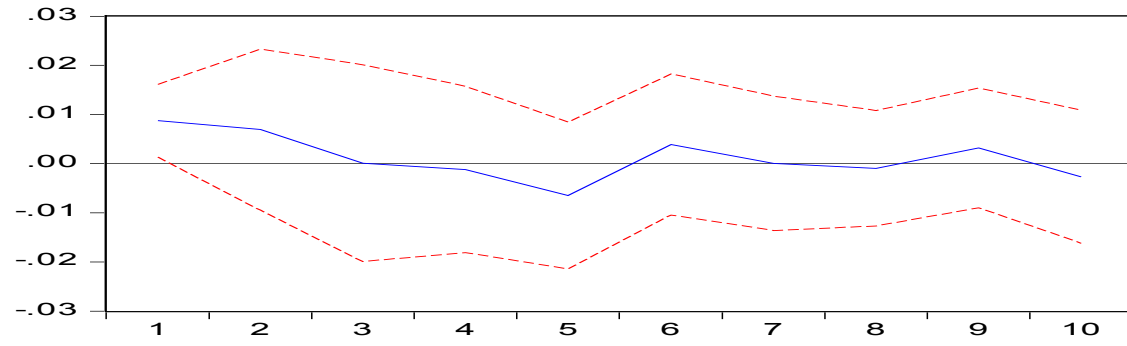
UK monetary shock to Botswana

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

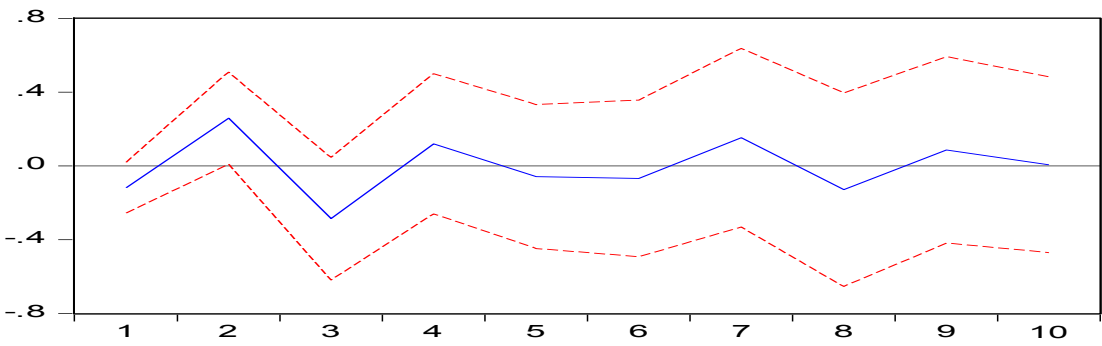
Response of LLSAGDP to LLUKM2



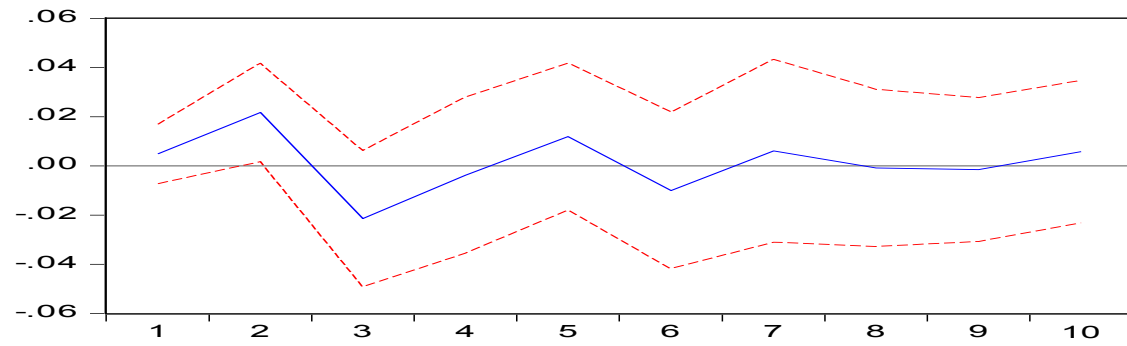
Response of LLSACPI to LLUKM2



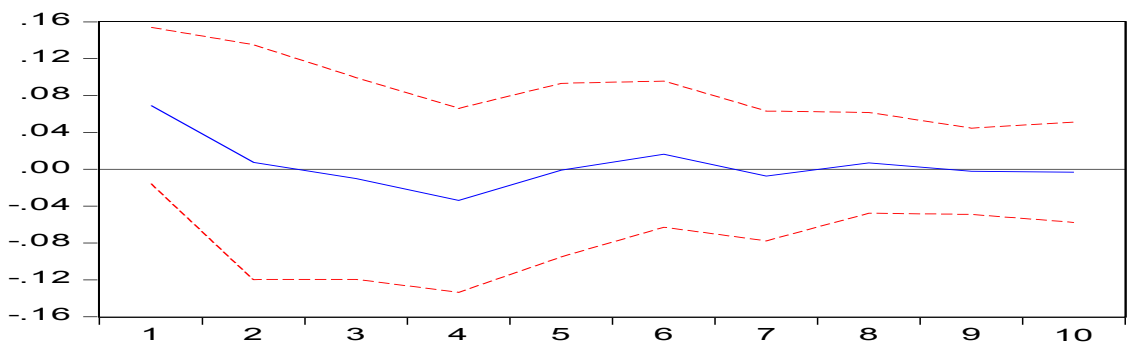
Response of LLSARR to LLUKM2



Response of LLSAM2 to LLUKM2



Response of LLSANEER to LLUKM2



Conclusions and Policy Implications

❖ China's monetary expansion

➤ Botswana

- Reduces economic growth, inflation, real interest rate and nominal exchange rate
- Increases M2

➤ South Africa

- Reduces economic growth, inflation, the real interest rate and M2
- Increases nominal exchange rate

❖ US monetary expansion

➤ Botswana

- Increases economic growth and nominal exchange rate
- Decreases inflation, real interest rate and money supply

Conclusions and Policy Implications Cont'd

❖ US monetary expansion

➤ South Africa

- Decreases economic growth, real interest rate and M2
- Increases inflation and nominal exchange rate.

❖ UK monetary expansion

➤ Botswana

- Increases economic growth, real interest rate and nominal exchange rate
- Decreases inflation and M2.

➤ South Africa

- Decreases economic growth and real interest rate
- Increases CPI, M2 and nominal exchange rate.

Thank You