Replication: Identifying Aggregate Supply and Demand Shocks in South Africa

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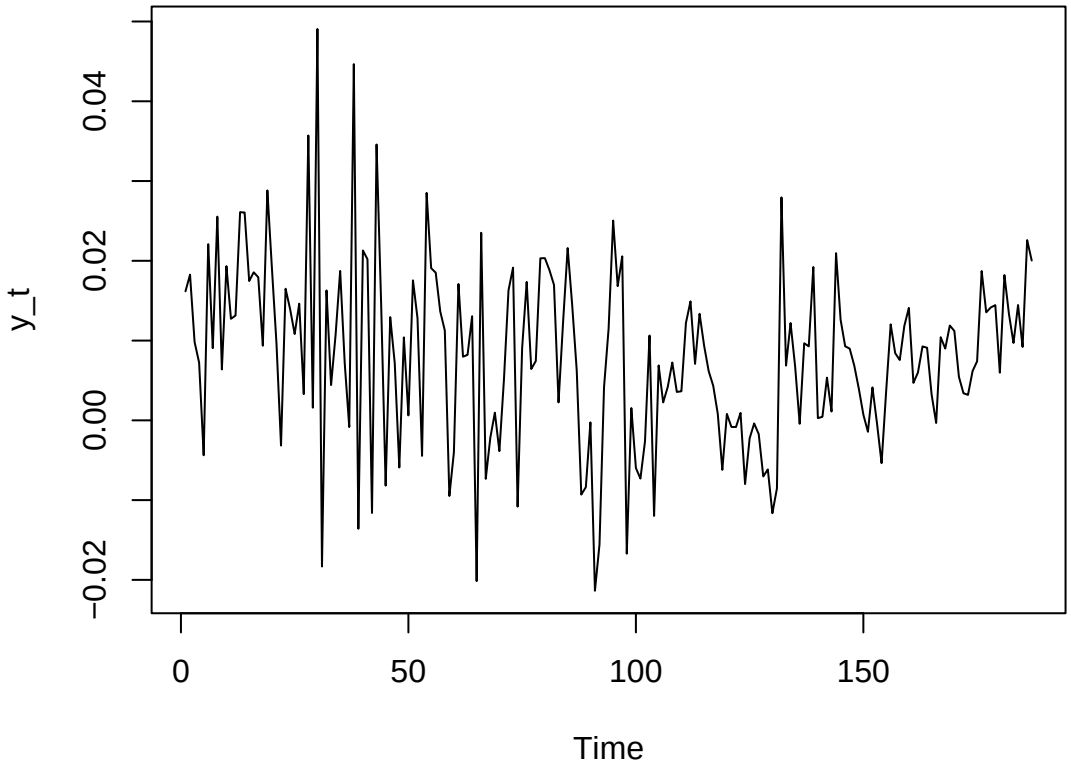
1. Introduction

The paper, *Identifying aggregate supply and demand shocks in South Africa*, is an application of a structural VAR method to identify supply and demand shocks for the South African economy since the 1960s.



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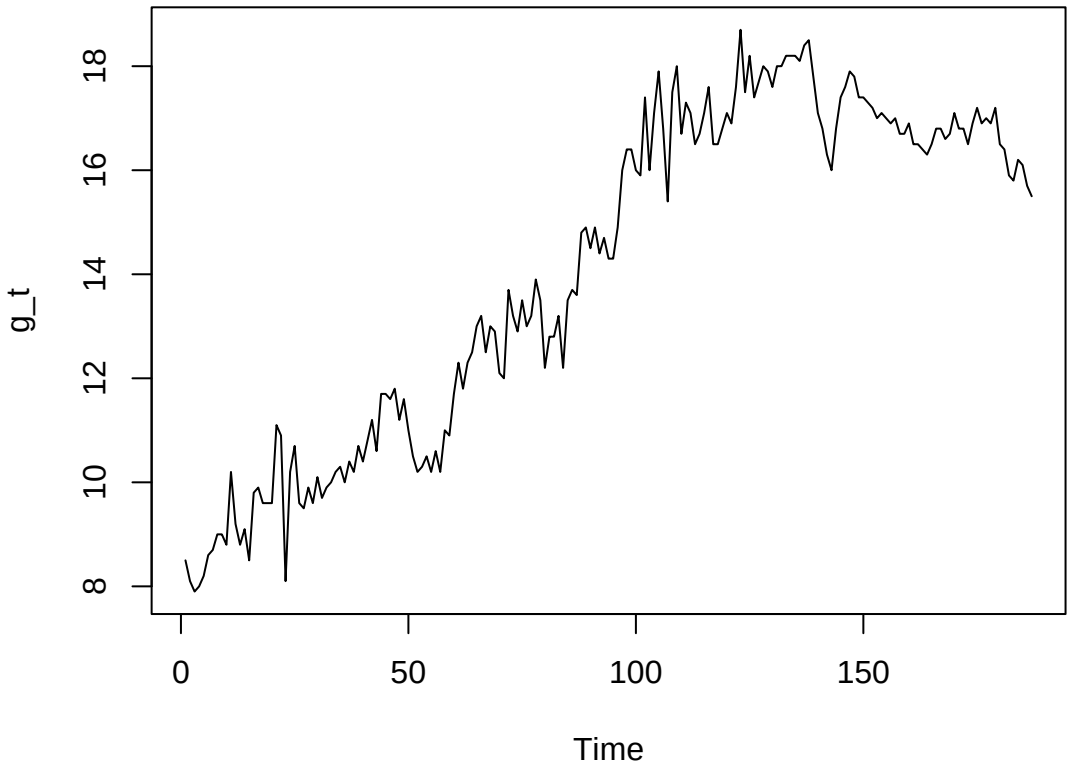
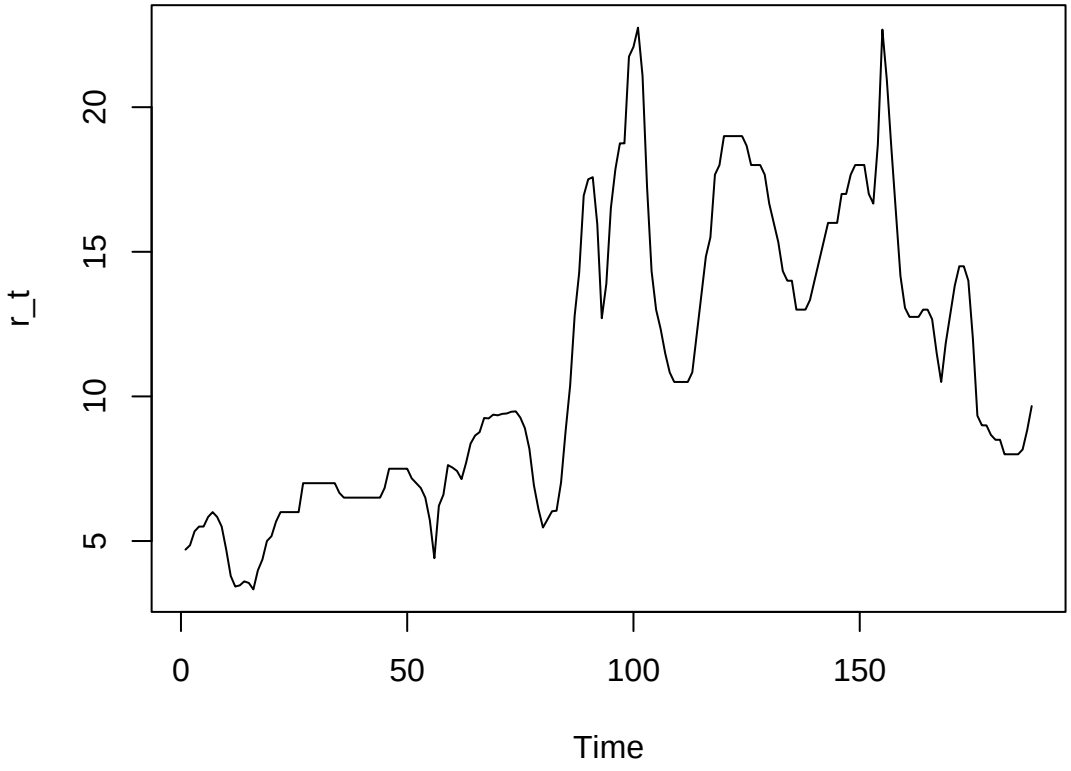
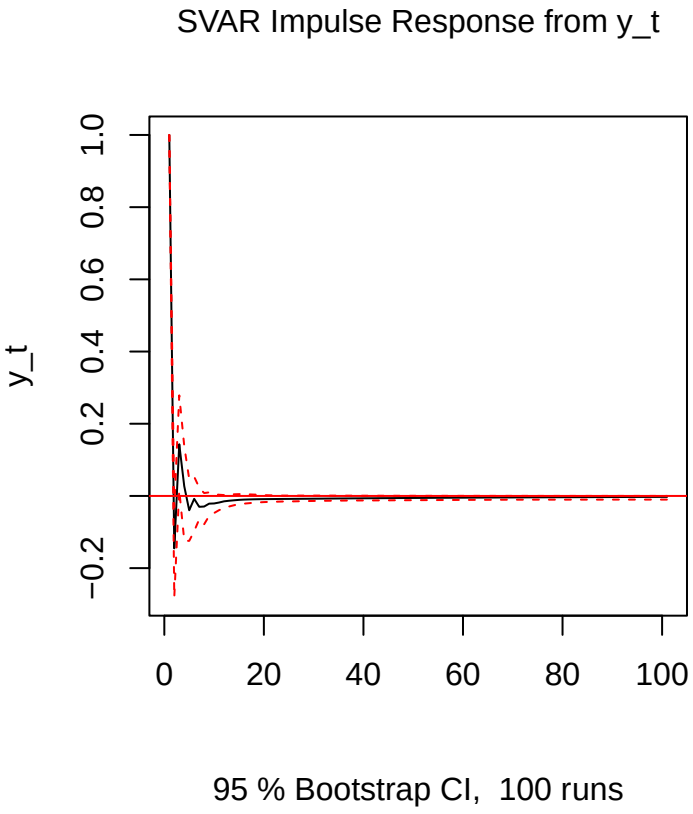
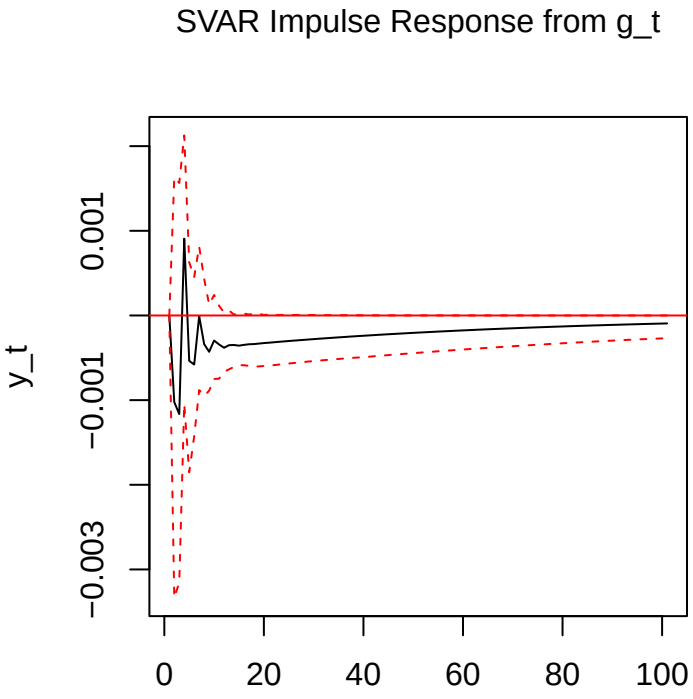

g_t
8
10
12
14
16
18
0
50
100
150
Time

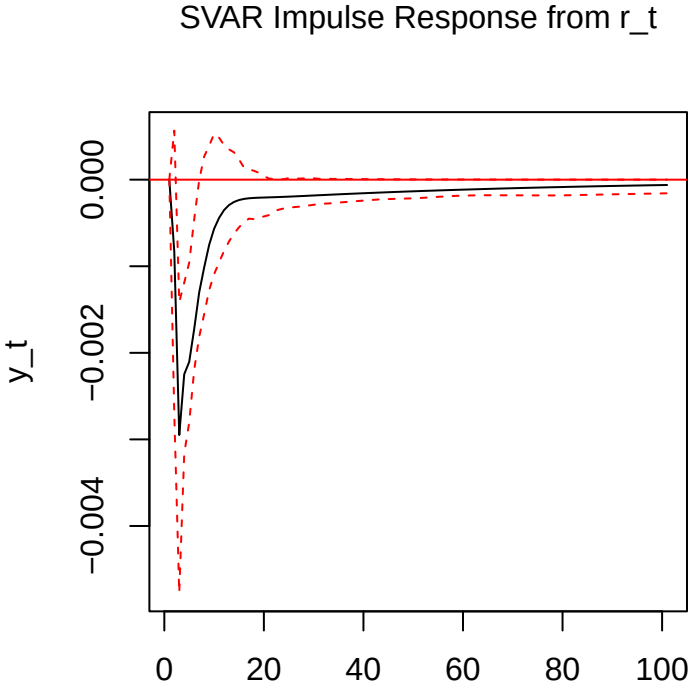

r_t
5
10
15
20
0
50
100
150
Time

2. IRFs

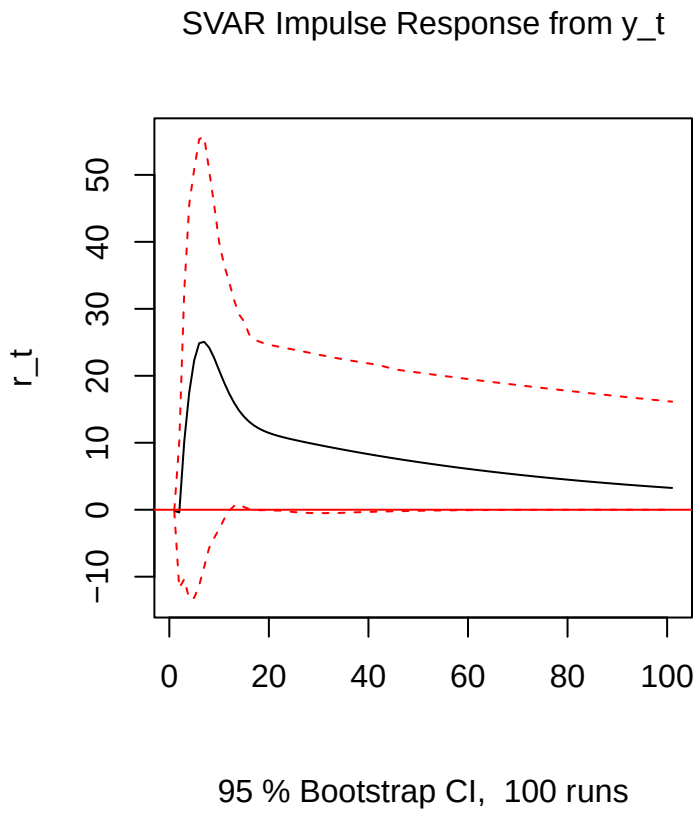
2.1. Impulse Response of real GDP for each of the identified shocks

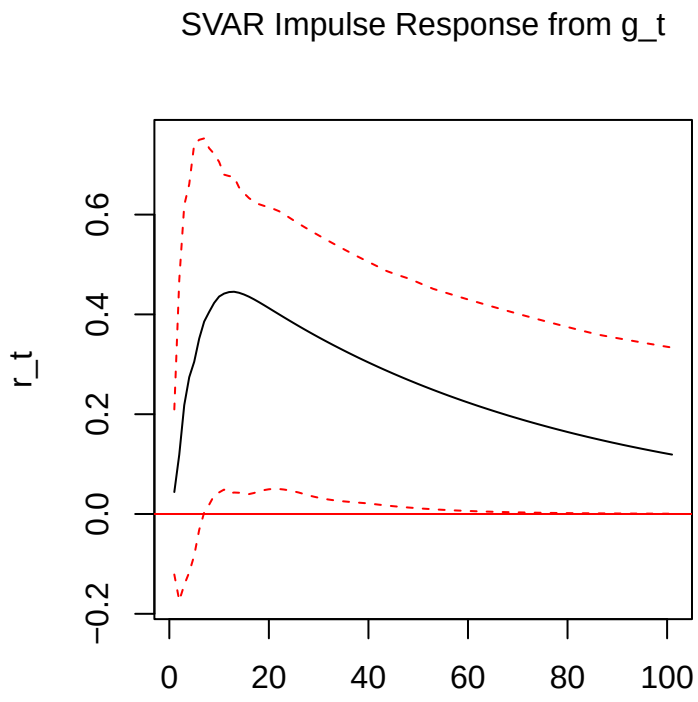


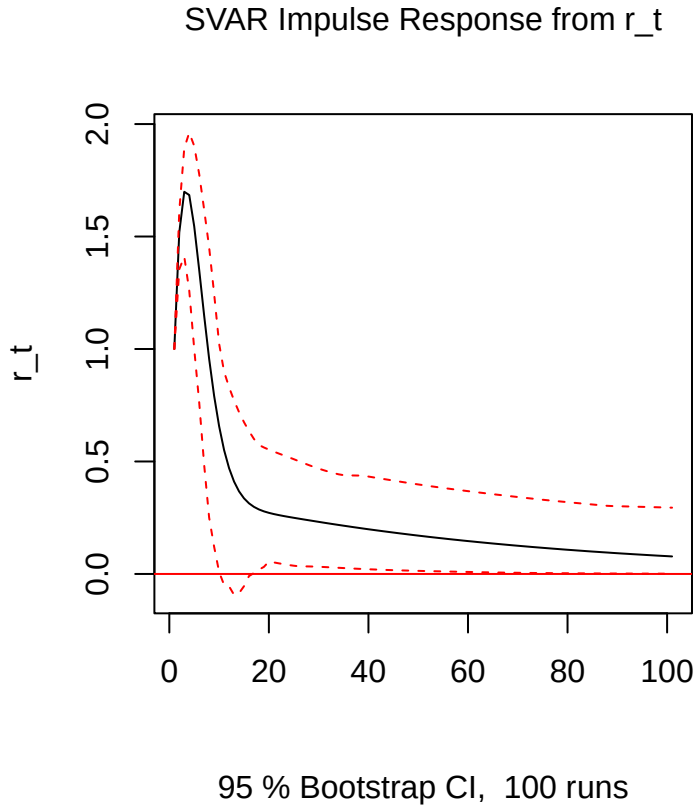

SVAR Impulse Response from g_t
y_t
0.001
−0.001
−0.003
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs


SVAR Impulse Response from r_t
y_t
0.000
−0.002
−0.004
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs

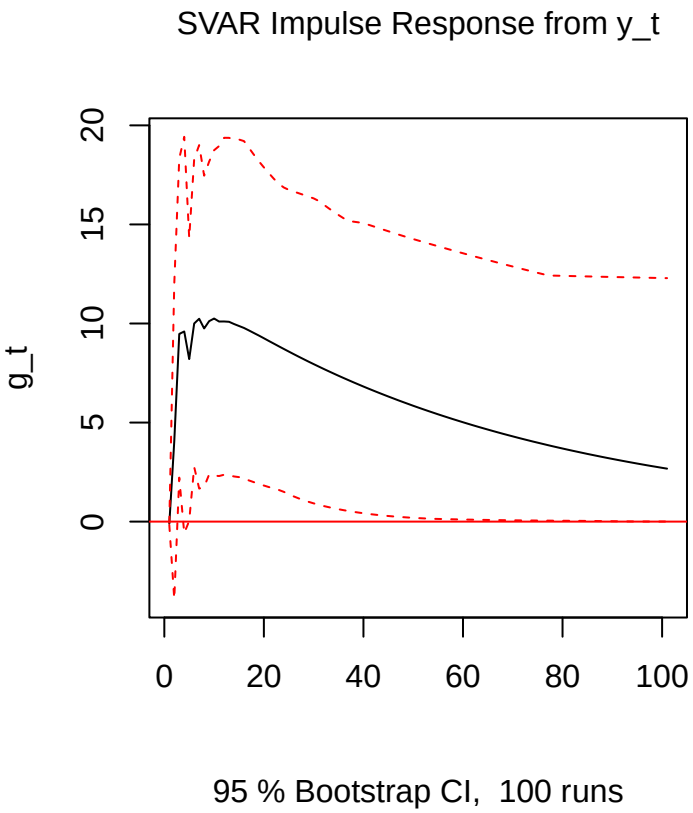
2.2. Impulse Response of the real interest rate for each of the identified shocks

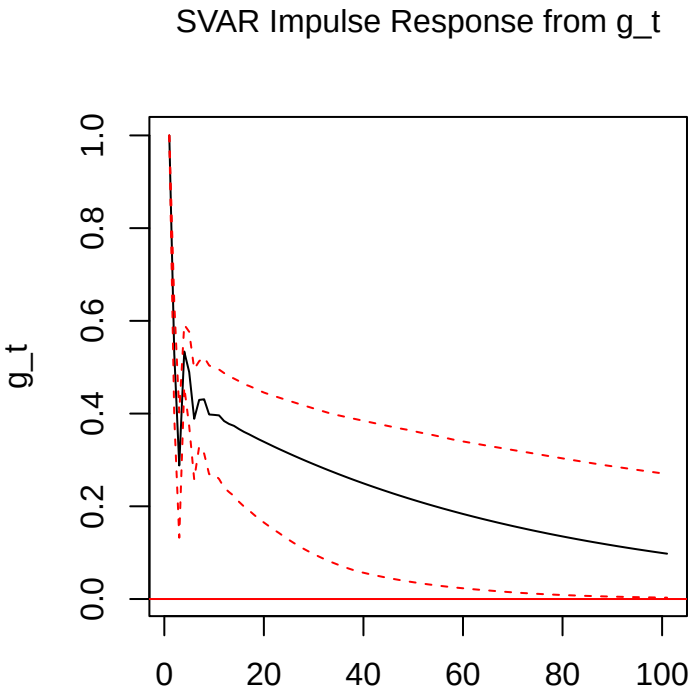


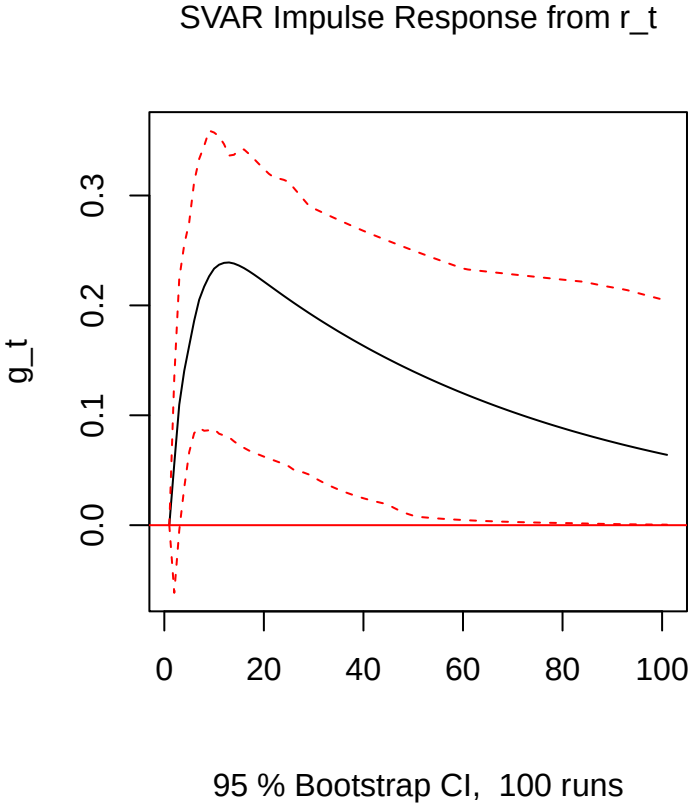

SVAR Impulse Response from g_t
r_t
−0.2
0.0
0.2
0.4
0.6
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs


SVAR Impulse Response from r_t
r_t
0.0
0.5
1.0
1.5
2.0
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs

2.3. IRF of the government consumption to real GDP for each of the identified shocks




SVAR Impulse Response from g_t
g_t
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs


SVAR Impulse Response from r_t
g_t
0.0
0.1
0.2
0.3
0
20
40
60
80
100
95 % Bootstrap CI, 100 runs

3. Reference List

Du Plessis, S., Smit, B. and Sturzenegger, F., 2008. Identifying aggregate supply and demand shocks in South Africa. Journal of African economies, 17(5), pp.765-793.

4. Appendix

4.1. Testing for Stationarity

```
##
##  Augmented Dickey-Fuller Test
##
## data:  real_gdp1
## Dickey-Fuller = -3.7922, Lag order = 5, p-value = 0.0208
## alternative hypothesis: stationary
```

```
##
##  Augmented Dickey-Fuller Test
##
## data:  Real_interest1$Real_interest_rate
## Dickey-Fuller = -2.6335, Lag order = 5, p-value = 0.3112
## alternative hypothesis: stationary
```

```
##
##  Augmented Dickey-Fuller Test
##
## data:  g_g_not_s$Value
## Dickey-Fuller = -0.66065, Lag order = 5, p-value = 0.9724
## alternative hypothesis: stationary
```