

Editorial Comments

Normally, the variables that are used are non-stationary which makes all the analysis to be failed if regression is spurious. It is necessary to confirm this nonstationarity or not. In fact, the r-squared of 0,95 is a first indication that regression could be spurious.

Authors' feedback

Thank you for your thorough review and constructive feedback on our manuscript. The authors are grateful. Considering the importance of your feedback, our response is as follows:

1. Data sources: All data used in this study were from secondary sources. Data on CPI were from Ghana Statistical Service (GSS) [www.statsghana.gov.gh]. Data on exchange rate were extracted from Bank of Ghana (BoG) data bank [www.bog.gov.gh]. Data on crude oil price per barrel were also extracted from US Energy Information Administration (EIA) databank [www.eia.gov]. These sources are credible and verifiable.
2. Data Analysis: The authors were very meticulous in the analysis of the data and adopted the most appropriate methodology.
 - i. The Augmented Dickey-Fuller (ADF) test was used to test for the stationarity of the variables. The variables: CPI, Crude Oil Price and Exchange Rate being time series showed characteristics of nonstationarity at their initial levels. However, the variables were stationary after taking the first differences. Figures 1, 2 and 3 indicate the time series plot of the transformation of the variables: Crude Oil Price, CPI, and Exchange Rate from nonstationarity to stationarity at the first differences.

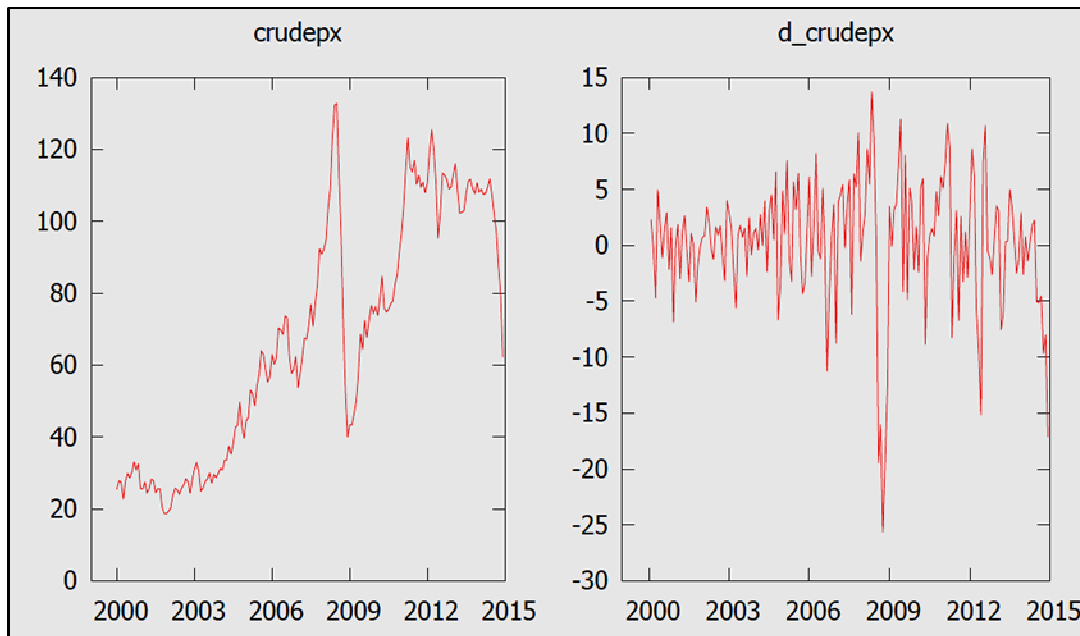


Figure 1: Transformation of Crude oil price data from nonstationarity (left plot) to stationarity (right plot)

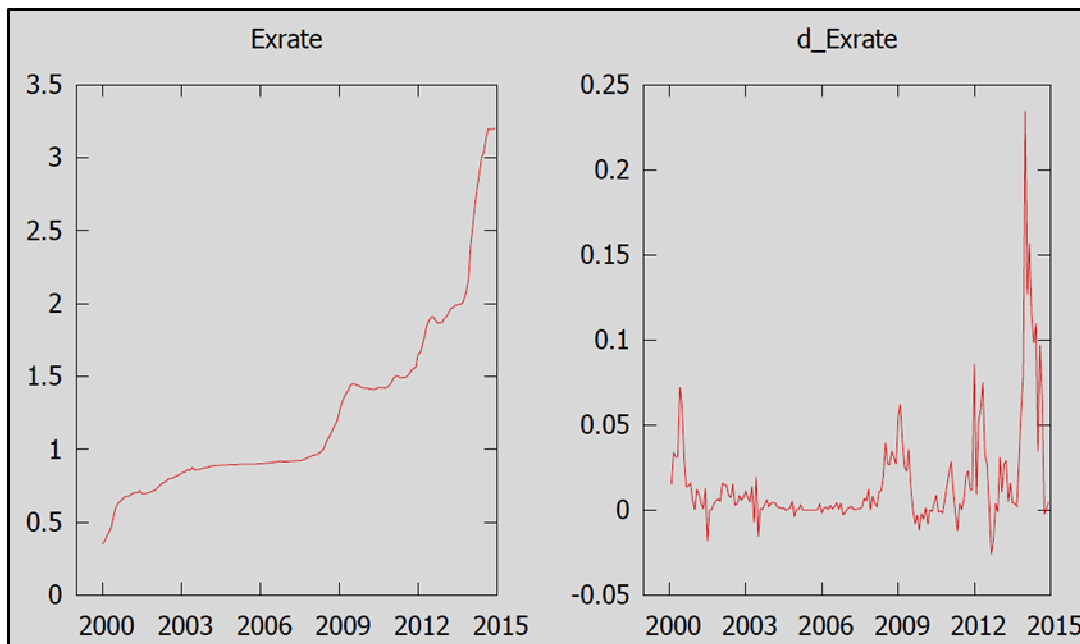


Figure 2: Transformation of Exchange Rate data from nonstationarity (left plot) to stationarity (right plot)

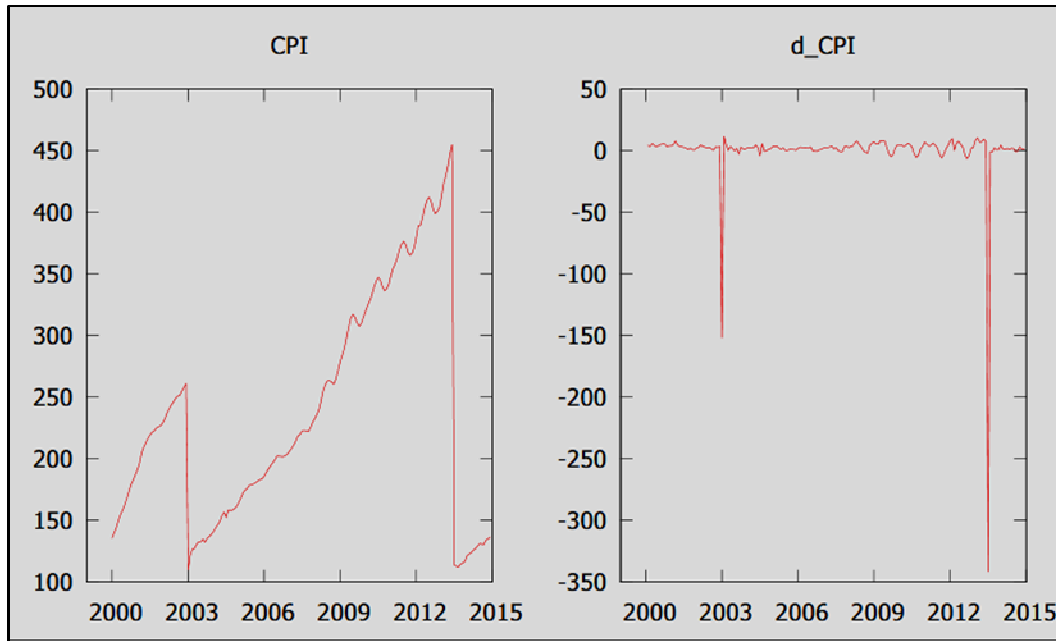


Figure 3: Transformation of CPI data from nonstationarity (left plot) to stationarity (right plot)

- ii. To normalise the differences in the elements of each variable the natural log was used. Taking the natural log standardises the variables and make them relatively uniform and to reduce the possibility of Heteroskedasticity.
 - iii. Next, the Variance Inflation Factor (VIF) was used to test for multicollinearity. There was no problem of multicollinearity since all the variables had VIF of less than 10
 - iv. However, Breusch–Pagan–Godfrey (BPG) test and the Breusch–Godfrey (BG) test indicated the presence of heteroskedasticity and first order autocorrelation respectively. The BPG test was used because unlike the Goldfeld-Quandt test, the BPG does not depend on the number of central observations and the variable causing the heteroskedasticity. The BG test was used to test for first-order autocorrelation because unlike the Durbin-Watson tests, it allows for non-stochastic regressors and can also be used for higher order auto regressive schemes [AR (1), AR (2), etc.].
 - v. To correct for the Heteroskedasticity and autocorrelation, the Newey-West HAC (Heteroskedasticity and Autocorrelation Consistent) procedure was used. The Newey-West HAC procedure was used because it is strictly valid in large samples. In addition, the HAC procedure inherently corrects the OLS standard errors.
3. Results: Having diligently undergone these processes, the authors are confident that the results are a true reflection of a valid scientific process and therefore do not represent a spurious regression. That said, we have also included the text on the ADF test for stationarity in our manuscript. Thank you.