The Analysis of the Determinants of Exchange Rate via Conditional and Partial Granger Causality Test

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Objective

The relationships among the macroeconomic variables (exchange rate, deposit rate, gold prices, BIST100 Istanbul stock market index) of Turkey in the 2010.08 – 2015.12 period were investigated by conditional and partial Granger causality tests. First, the theoretical information about conditional and partial G-causality tests is given. Then, these causality tests were applied to the data using the R software program. The results of the conditional and partial G-causality tests showed significant G-causalities: positive G-causality relationship from the exchange rate to the deposit rate, and a negative mutual G-causality between BIST100 and the deposit rate.

Methodology

A. Data
Turkey’s economy: 2006.06 - 2015.12
Variables: Exchange rate (USD/TRY); gold price (USD per ounce); BIST100 stock index (2003=100); deposit rate (%). 115 monthly observations.

B. Causality Measures

B1. Conditional G-Causality

B2. Partial G-Causality

Results

Conditional GC Network Topology of the 4-variable System

Partial GC Network Topology of the 4-variable System

Conclusions

The results of the conditional and partial G-causality tests:
- There exist significant G-causalities:
  - positive G-causality relationship from the exchange rate to the deposit rate, and
  - a negative mutual G-causality between BIST100 and the deposit rate.

References


Access to details: https://zenodo.org/record/322576#.WU17UTLyjDd page:105-160