

GENEVA
GRADUATE
INSTITUTE

INTERNATIONAL
ECONOMICS

Discussion of:

**Drivers of inflation:
money aggregates and expectations**

Cédric Tille

Geneva Graduate Institute, and CEPR

Research workshop of the BCC 10th annual conference

Geneva, September 22, 2022

It's back: understanding inflation

- For years central banks have been faced with low inflation, despite very expansionary monetary policy.
 - No more. Understanding what drives inflation is highly relevant.
- *Central bank balance sheet and inflation in a small open euroized economy with constrained capital markets (Gent Sejko and Altin Tanku).*
 - Does balance sheet policy constitute an additional policy tool, and does it work?
- *Money growth and inflation in Tunisia: new evidence from a wavelet analysis (Jaidi Zied and Souhaib Zardi).*
 - How does the link between money and inflation evolves through time and across frequencies?
- *Role of the media in the inflation expectation formation process (Tetiana Yukhymenko).*
 - How do economic news affect expectations of different agents?

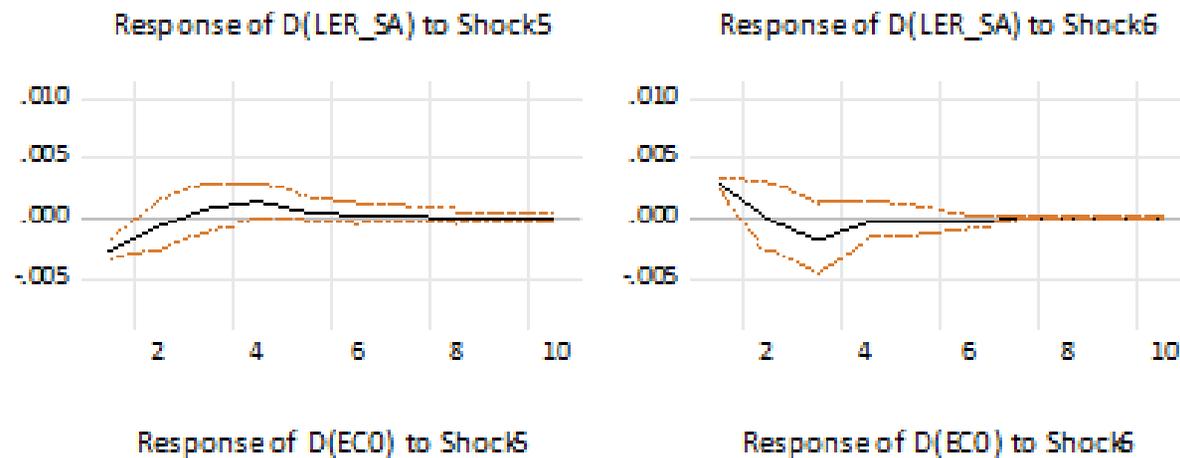
Changing policy in Albania

- Challenges facing the Bank of Albania: limit financial market depth (affects interest rate channel) and appreciating currency.
- Interest rate lowered to the lower bound, policy operations moved towards using balance sheet tools.
 - Accumulation of FX reserves, increasing role of non-borrowed (NB) reserves in monetary base (rather than short term repos).
 - NB reserves do not have the short maturity of usual operations.
- VAR analysis to assess the impact of standard monetary policy (interest rate) and new tools (NB reserves).
 - Careful identification.
 - NB reserves shocks impact inflation, the exchange rate, and growth, in a similar way as interest rate shocks.
 - Balance sheet policy works.

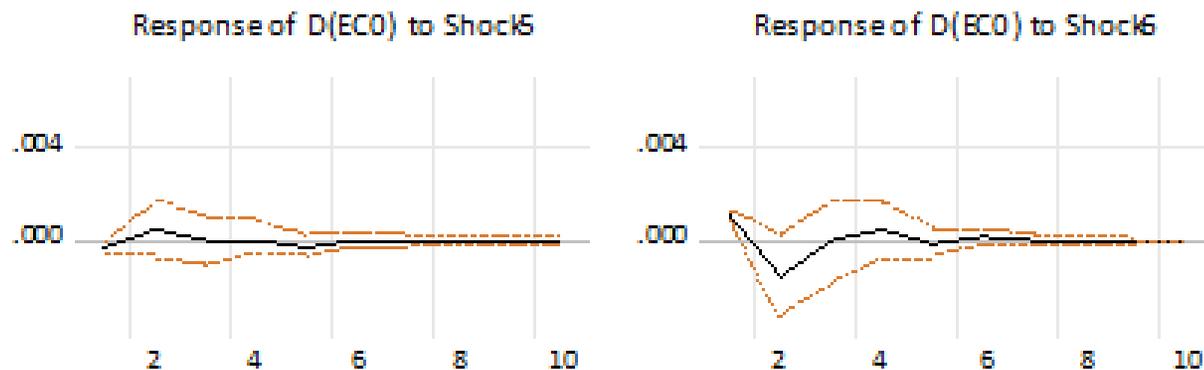
Contrasting shocks

- «Shock 5» (increase in policy rate) and «shock 6» (increase in NBR).
- Impact on exchange rate as expected:

↓ = appreciation



- Impact on CPI appears non-significant (but hard to read clearly).

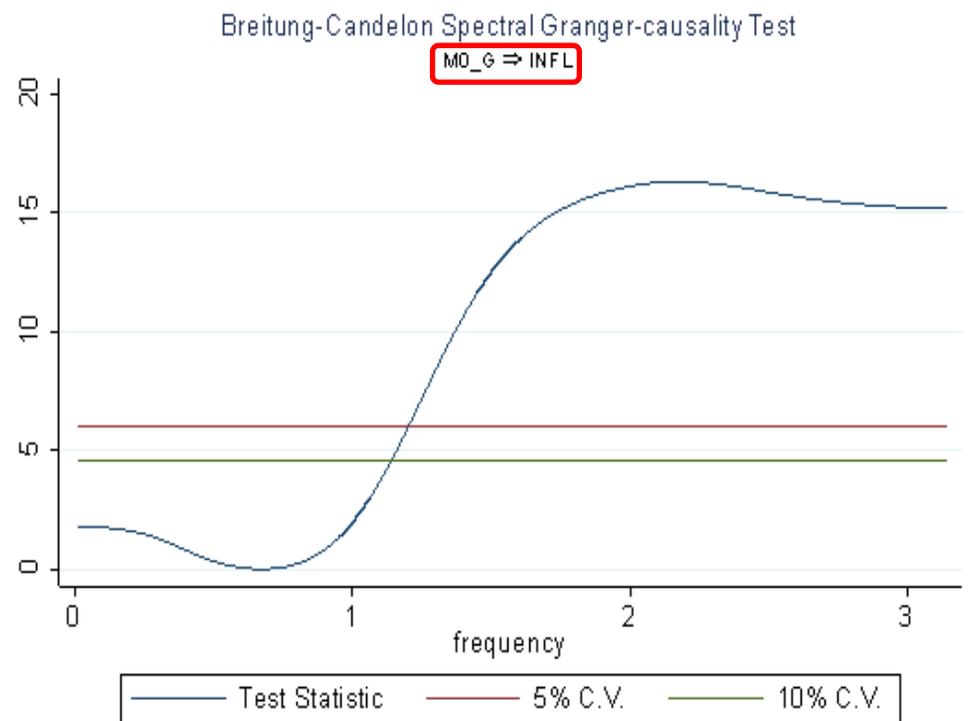
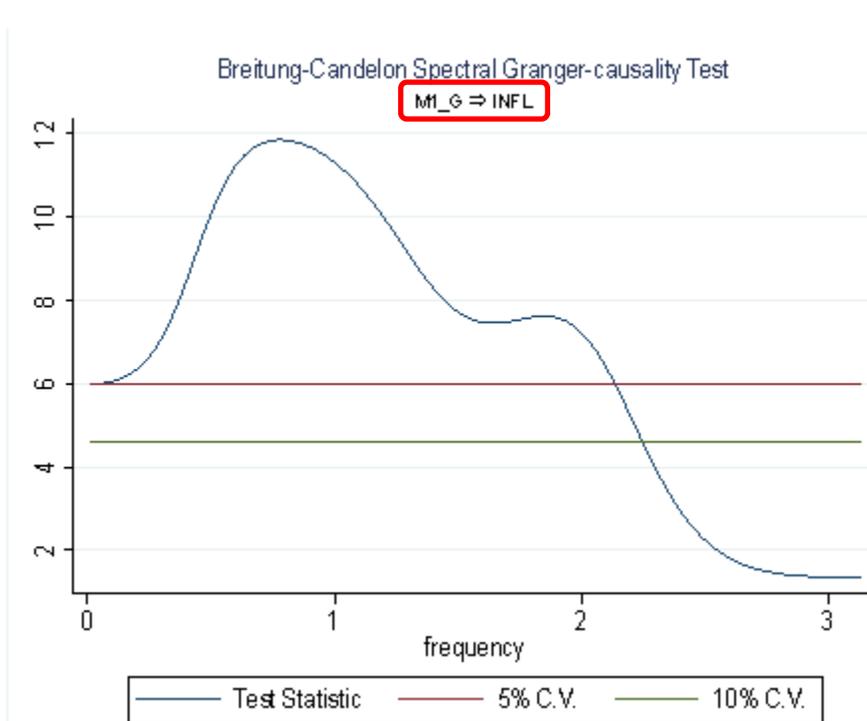


Do we have a new tool?

- The VAR considers the level of NB reserves.
 - Is it quantity easing (M0), or the composition of M0?
 - Alternative specification with a) M0 level and b) ratio of NB reserves to M0 would help distinguishing between size and composition.
- Is this an additional tool in all circumstances?
 - Balance sheet policy is a tool when the interest rate is not usable because of the lower bound.
 - In normal times, are interest rate policy and the balance sheet policy two sides of the same medal?
- Interpretation of NB reserves as more permanent than repos.
 - Not necessarily (FX interventions can be reverted), but possibly in practice.
 - Cast as transmission through the expectation channel.
- Focus on economic results, put technical aspects in appendix.

Inflation and money in Tunisia

- Application of wavelet analysis: time-varying spectral analysis.
 - Contrast comovements at different frequencies.
 - Allow these to vary through time.
- Spectral Granger causality points to money growth causing inflation in contrasted ways: broad aggregates from 0 to 2 years, M0 after.



Economic mechanism

- Careful statistical analysis using advanced techniques (but beware of assuming that the reader is deeply familiar with the techniques).
 - In addition to Granger causality, assessment of comovements across time and frequencies.
- What should we draw in terms of economic message?
 - Provide a more complete discussion of the lessons from the figures.
 - Provide an a-priori on what to expect (from theory or literature).
- Co-movements vary across time (stronger since 2010 for short cycles).
 - Does this correspond to particular events in the Tunisian economy?
- Granger causality tests provide statistical significance.
 - A sense of magnitude would be useful.
- Granger causality is assessed over the full period, while comovements are time-varying.

An attempt at interpretation

- M2 drives inflation at short horizons, M0 drives it at longer horizons.
 - Can we interpret this as the presence of temporary money demand shocks?
 - Money supply shocks by contrast take time to be transmitted to inflation.
- How would structural breaks affect the results?
 - For example, consider that velocity increases (possibly gradually) over a few years ($V=PY/M$).
 - Before, and after, the shift, money creation feeds into inflation.
 - During the shift, money creation feeds even more strongly into inflation (it is amplified by velocity).
 - How would a wavelet analysis see such a shift?
 - Tunisia likely experienced structural shifts since the mid-1990's.

Inflation expectations in Ukraine

- In forward-looking macroeconomic models, expectations of future inflation affect current inflation.
 - Our measures of expectations and understanding of drivers remains limited (although fast improving).
- Assess the expectation processes of different actors (banks, non-financial firms, analysts, households) based on news.
- Construction of news-indicators («naive» and machine learning, LDA) of the coverage of several components of the consumer basket.
- Impact on expectations from surveys.
 - Households (and analysts) react to news on utility prices.
 - Businesses react to news on food prices (large agriculture sector).
 - Results can be sensitive to frequency (quarterly vs. monthly), specification (first-difference) and construction of news measure (FX matters only with LDA measure).

Possible refinements

- Why undertake separate regressions for the various topics of news (exchange rate, food prices, utility prices)?
 - They are unlikely to be orthogonal.
 - Instead undertake one regression with all included.
 - In addition to coefficients for each lag, provide a F-test of joint effect.
- Are some news sources more influential?
 - If some newspaper are more widely read, or seen as more rigorous, they may affect expectations more.
- Provide a sense of magnitude (e.g. impact of 1 standard deviation news shock).

Interpretations

- Different role of news on specific prices.
 - Food for businesses' expectations: reflects their sell price.
 - Utility for households' expectations: could be perceived as more persistent.
- Do the surveys include information beyond 12 months?
- Are there non-linearities?
 - In a low inflation environment, expectations may not react much.
 - Agents pay more attention to news when inflation is high.
 - Interact the news measure with the level of inflation over the previous 12 months.
- Should we read the results as indicating some causality?
 - Expectations and news may both react to the same shocks.