Inflation Dynamics of Turkey: A Structural Estimation

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Is the New Keynesian Phillips Curve (NKPC):

- Forward-looking (i.e., does inflation depend on future inflation)?
- Hybrid (i.e., does inflation depend on past and future inflation)?

Existing literature supports hybrid NKPC for the U.S. and Euro area countries.

- Gali and Gertler (1999; henceforth GG)
- Gali, Gertler, and Lopez-Salido (2001)

This paper favors pure forward-looking NKPC using data on Turkish economy.

- Backward-looking behavior is rejected.
Methodology

- Forward-looking NKPC:
  \[ \pi_t = \beta E_t (\pi_{t+1}) + \lambda \hat{m}_c_t \]
  
  where
  \[ \lambda = \frac{(1 - \theta)(1 - \beta \theta)}{\theta} \]

- Hybrid NKPC:
  \[ \pi_t = \gamma_f E_t (\pi_{t+1}) + \gamma_b \pi_{t-1} + \lambda \hat{m}_c_t \]
  
  where
  \[ \gamma_f = \beta \theta \]
  \[ \gamma_b = \omega \]
  \[ \lambda = \frac{(1 - \omega)(1 - \theta)(1 - \beta \theta)}{\theta + \omega (1 - \theta (1 - \beta))} \]
The Turkish data are:
- from the State Planning Organization of Turkey
- cover quarterly period over the period 1988:2-2003:1

A nonlinear GMM estimation using Limited Information ML

The estimation results for forward-looking NKPC are:
- $\theta = 0.41$
  - prices are fixed for 1.7 quarters for the Turkish economy
- Compare the results with the U.S. economy (GG)
  - $\theta = 0.83$ where price are fixed for 5.9 quarters

The estimation results for hybrid NKPC are:
- $\theta = 0.33$
  - prices are fixed for 1.5 quarters for the Turkish economy
  - $\gamma_b$ and $\omega$ are insignificant
  - backward-looking behavior is rejected
- Compare the results with the U.S. economy (GG)
  - $\theta = 0.81$ where price are fixed for 5.3 quarters
  - $\gamma_b$ and $\omega$ are significant