

Discussion of "Holding the Economy by the Tail: Analysis of Short- and Long-run Macroeconomic Risks" by M. Franta & J. Libich

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CNB Research Open Day 2022



Starting Point: Adrian, Boyarchenko & Giannone (AER)

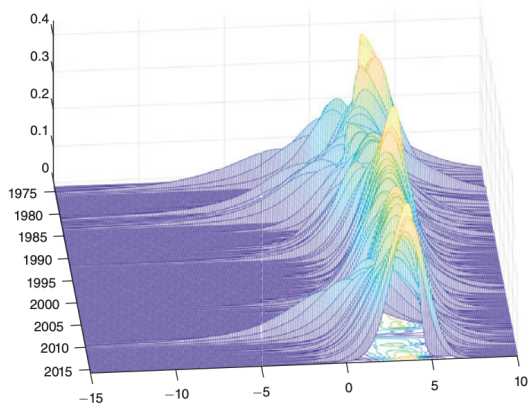
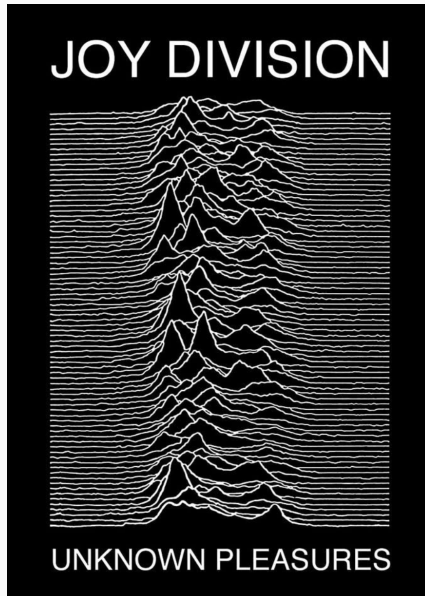


FIGURE 1. DISTRIBUTION OF GDP GROWTH OVER TIME

Note: One-year-ahead predictive distribution of real GDP growth, based on quantile regressions with current real GDP growth and NFCI as conditioning variables.

In Case This Looks Oddly Familiar...



What Drives This Asymmetry?

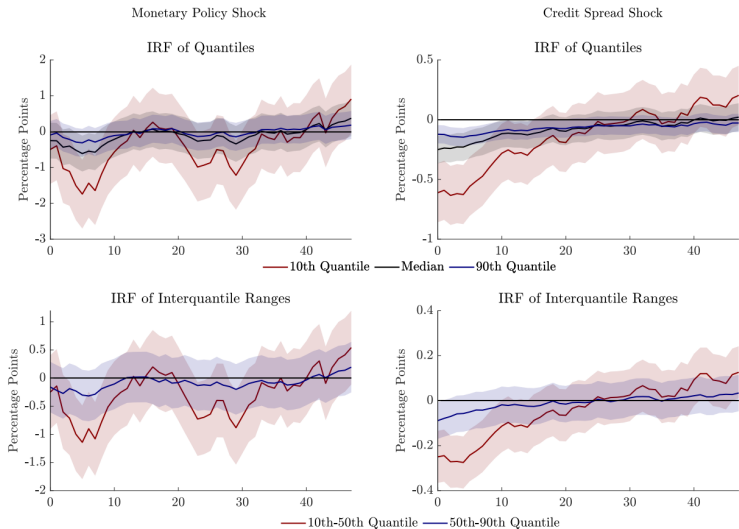
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- Might be easier (both numerically and in terms of interpretation) to use two separate steps:
 1. Estimate moments or quantiles of this forecast distribution over time
 2. Estimate response of these moments or quantiles to structural shocks (think local projections)
 3. This paper: **threshold VAR** for step 1
 4. My work with F. Loria & D. Zhang: quantile regressions



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- **But:** We also have many other pieces of evidence of nonlinear effects of structural shocks in macro that are not directly related to the forecast distribution of GDP
- nonlinear effects of monetary policy shocks: Tenreyro & Thwaites, Barnichon & Matthes (tightening vs. loosening)
- nonlinear effects of financial shocks: Forni, Gambetti, Maffei-Faccioli & Sala, Barnichon, Matthes & Ziegenbein
- Similar evidence for fiscal shocks
- lines up well with nonlinear DSGE models -**but** usually only explored one shock at a time

Evidence From A DSGE Model

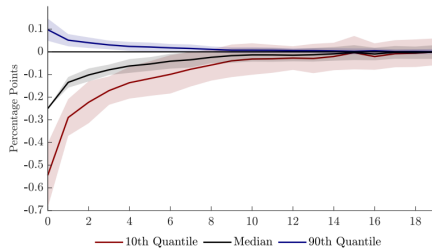


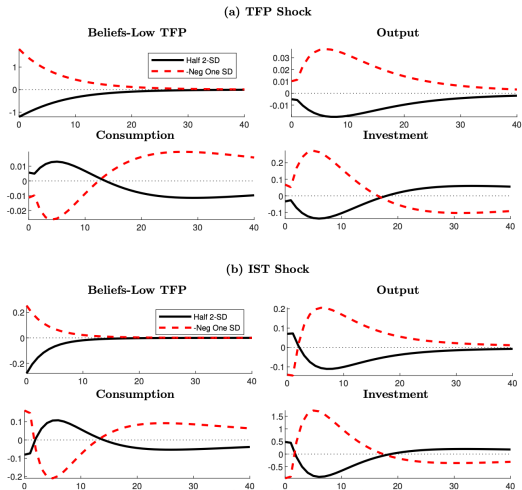
Figure 11: Impulse Responses of Quantiles of Simulated GDP Growth to a Capital Quality Shock from [Gertler, Kiyotaki and Prestipino \(2019\)](#) Model.

Note: Straight lines are medians across simulations. Shaded areas are 68% confidence bands.

The Quest For A Common Source Of Nonlinearity

- Financial frictions
- Real & nominal rigidities
- Maybe information frictions?

Figure 7: Asymmetries in Impulse Responses to Shocks with Learning



Notes: Panels show impulse responses to a shock to TFP (top panel) or IST (bottom panel), conditional on all regimes being in the low regime. Shocks are relative to the impulse response to a one standard deviation shock. All plots show annualized percent deviations relative to a one standard deviation shock.