Discussion of "Tails of inflation forecasts and tales of monetary policy" by Philippe Andrade, Eric Ghysels, and Julien Idier

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Very Brief Summary of the Paper

- Core: Looking for information content in asymmetries of survey forecast densities for inflation
- Approach:
  - Fitting beta distributions to individual forecast histograms of SPF
  - Calculating robust measure of asymmetry based on individual quantiles
  - Using asymmetry measure as explanatory variable in Mincer-Zarnowitz regressions and interest-rate rule estimations
- Fascinating results:
  - Asymmetry measure helps to forecast inflation
  - Interest rate decisions are affected by asymmetry measure

Relation with the Literature

- The paper is among the first to investigate the information content of asymmetries in macroeconomic density forecasts
  - Garcia & Manzanares (2007, ECB WP) find that asymmetric SPF inflation densities help to explain behavior of US long-term rates
  - Garcia & Werner (2010, ECB WP) report similar results for Europe (ECB's SPF)
  - Knüppel & Schultefrankenfeld (forthcoming 2012, IJCB) find no information content of asymmetries in central banks' inflation density forecasts wrt inflation
- Concerning the latter, question arises:
  Are there important differences between the formation of density forecasts in surveys and their formation by central banks?

Remarks on the Asymmetry Measure

- Asymmetry measure with $p = 0.05$ is defined as

$$ASY = E_i\left[ASY_i\right] = E_i\left[\left(q_i\left(0.95\right) - q_i\left(0.5\right)\right) - \left(q_i\left(0.5\right) - q_i\left(0.05\right)\right)\right]$$

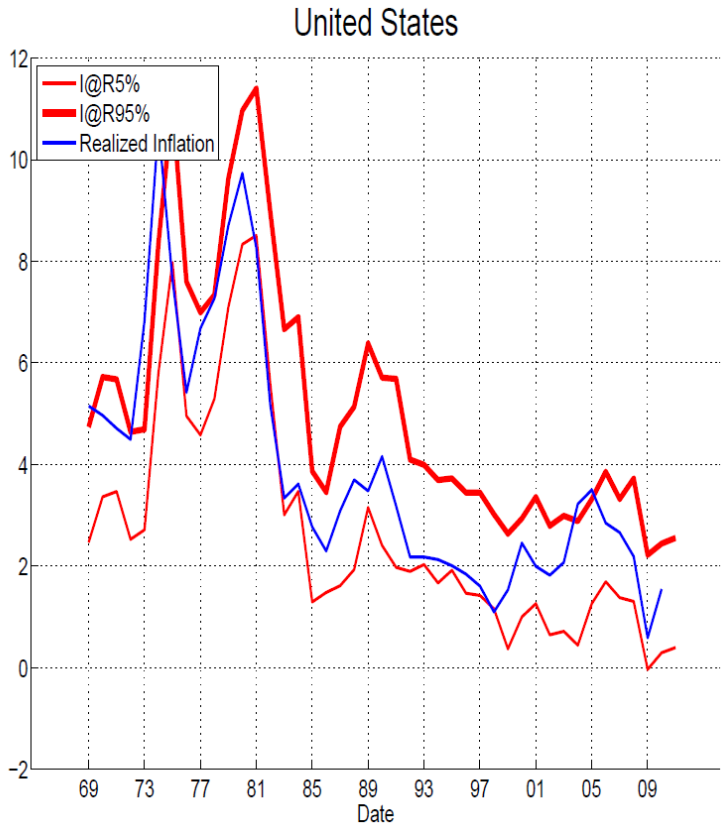
  being the average of individual asymmetry measures
- Not scale-free $\longrightarrow$ measures interaction of volatility and skewness (like third moments)
- ASY_i not normalized, but limits of ASY_i can be given in terms of quantiles

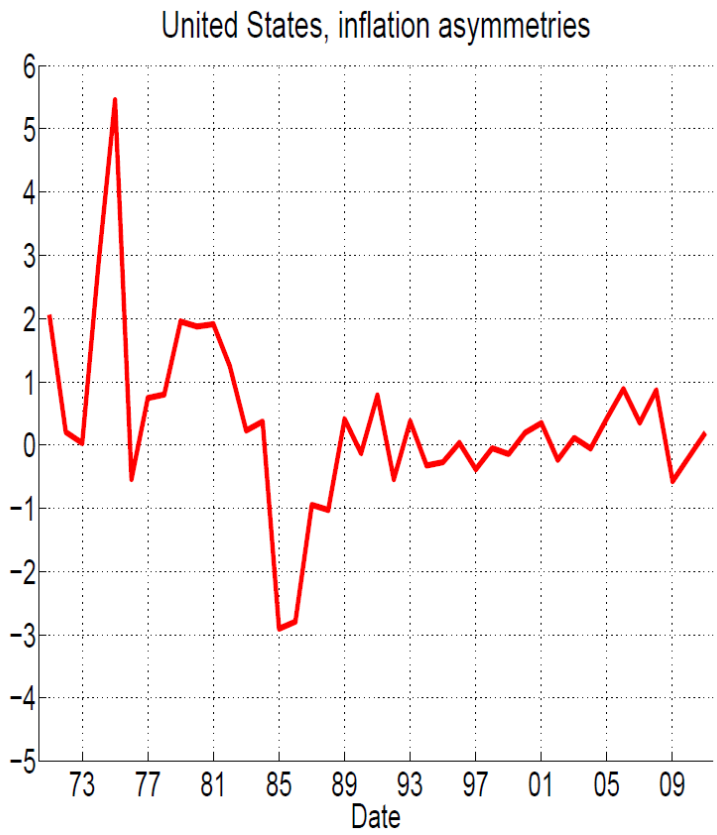
$$\begin{aligned}\max\left(ASY_i\right) &= q_i\left(0.95\right) - q_i\left(0.05\right), \text{ attained if } q_i\left(0.5\right) = q_i\left(0.05\right)\\ \min\left(ASY_i\right) &= q_i\left(0.05\right) - q_i\left(0.95\right), \text{ attained if } q_i\left(0.5\right) = q_i\left(0.95\right)\end{aligned}$$

- That is, the distance between upper and lower quantile determines the limits of ASY_i.

Remarks on the Asymmetry Measure

- What happened in 1985 (and in 1975)?



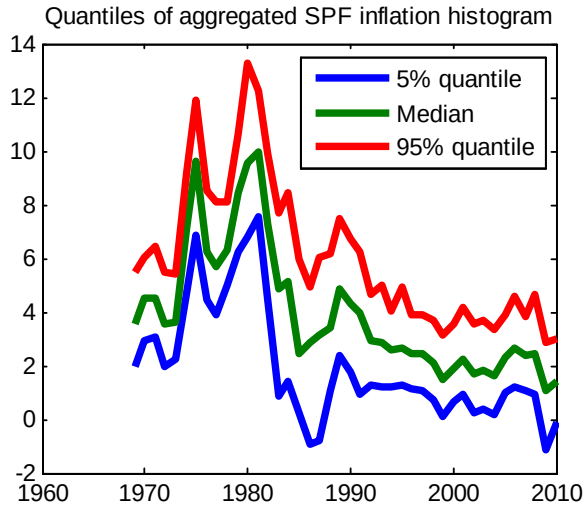


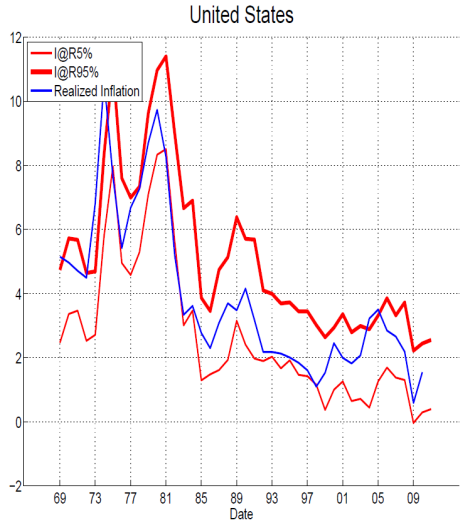
- 1985: Distance between quantiles ≈ 2.6, asymmetry measure ≈ -2.9
- $\longrightarrow$ **HUGE** asymmetry, would not be possible for ASY_i. What are the reasons?

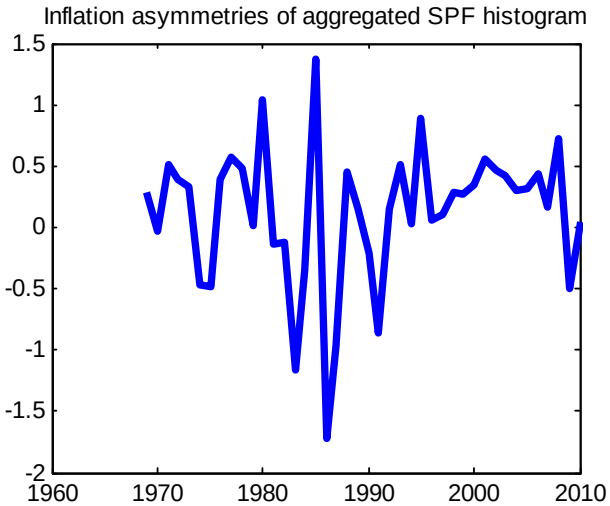
Remarks on the Robustness Checks

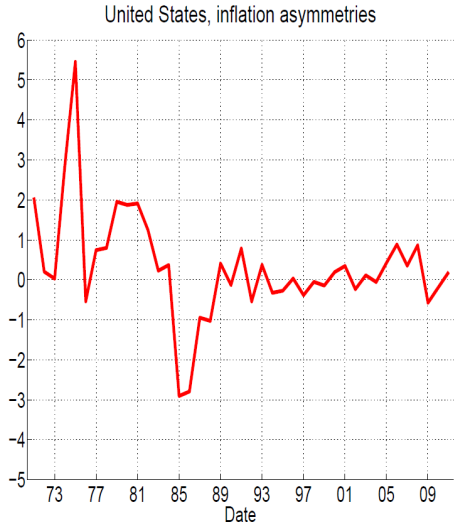
- Host of important robustness checks conducted, showing that results hardly change
- But one very interesting robustness check is only made for quantiles, not for *ASY* :
  beta distribution fitted to histogram aggregated from individual histograms
- Latter approach could easily lead to different results for *ASY* (*Imagine forecaster A assigns 90% prob. to bin 1, 10% prob. to bin 2, forecaster B 90% prob. to bin 2, 10% prob. to bin 3, etc. In the end, aggregate histogram shows almost symmetric uniform distribution, although individual densities are strongly asymmetric*)
- How is *ASY* of the aggregate density related to average *ASY* of individual densities empirically?

Statistics from Aggregation vs Aggregated Statistics





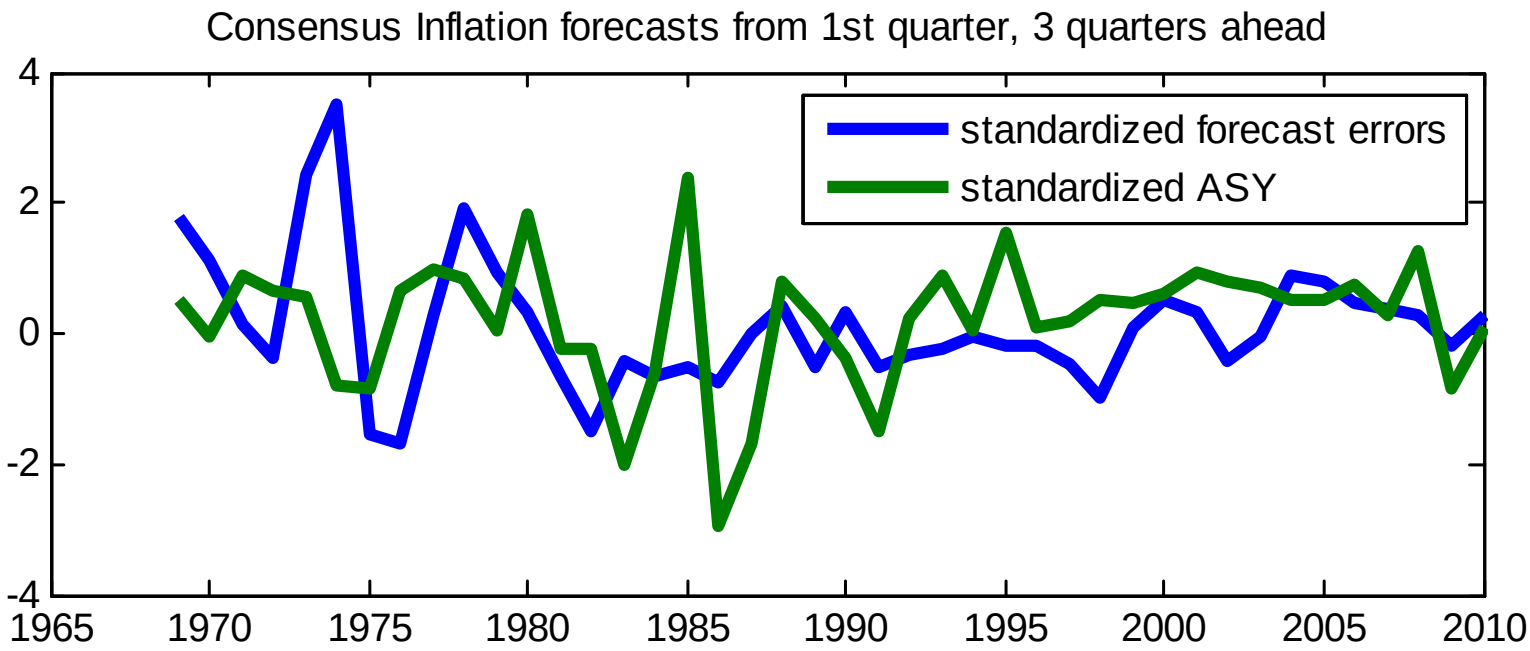




Statistics from Aggregation vs Aggregated Statistics

- Dynamics of quantiles hardly affected by calculating them from aggregated density
- *ASY* of aggregated density very different from average *ASY* of individual densities (largest(!) value in 1985)
- If individual *ASYs* have important information content, this could be lost due to aggregation
  $\longrightarrow$ would reconcile findings of present paper with those of Knüppel & Schultefrankenfeld (2012), because central banks' forecast densities are aggregated densities.

Statistics from Aggregation vs Aggregated Statistics



- Forecast errors and ASY of aggregated density are hardly correlated ($corr = 0.13$)
- Suggests that important information appears to be lost by aggregation

Suggestions

- Results of paper are fascinating, lead inevitably to desire for deeper understanding of asymmetries in survey density forecasts:
  - Theory: Garcia & Manzanares (2007) show that third moment of aggregate density can be decomposed into three components (third moment of mean forecasts, average over third moments of individual densities, third term). Can something similar be done with ASY?
  - Empirics: Could individual forecasters improve their mean forecasts by using their ASY_i (i.e. are they using their own information on asymmetries inefficiently)?
- Try to find explanations for huge (absolute) values of ASY in US SPF
- Conduct an out-of-sample forecasting comparison (mean forecasts vs mean forecasts+ASY)
- Extend empirical analysis to ECB's SPF
- Could you do the same for GDP growth?