

Master thesis presentation 3

Grahl, Lukas

Paris 1: Panthéon Sorbonne

January 23, 2024

To this date I have obtained the following data.

Data	Purpose	Source	Status	Frequency
Inflation π	realised inflation	Eurostat	obtained	M
Infl. expectation π^e	consumer inflation expectation	Bundesbank	obtained	M
ECB speeches	Supplement news data	ECB	obtained	6-W
News-paper articles	Analyse inflation reporting	Bundesbank	waiting	D

While I am waiting on the news paper data I am currently preparing my analysis code using ECB press releases.

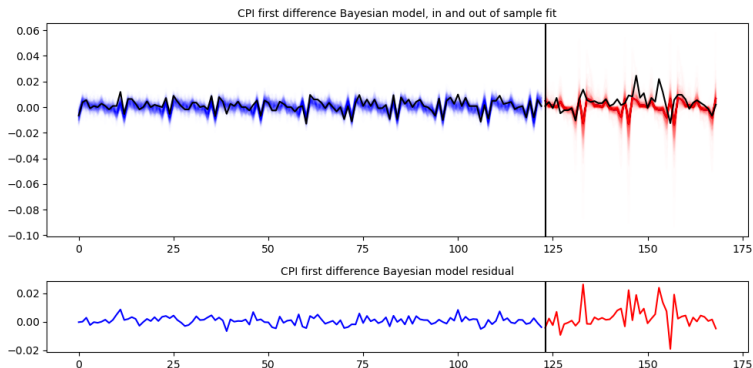
Moreover, in the upcoming weeks I will be working on the opinion formation model as presented last time.

Identifying surprise inflation

Pre-pandemic inflation behaviour can be describe by an intercept α , deterministic trend $\beta_1 t$ and seasonality $s_{t|s}$.

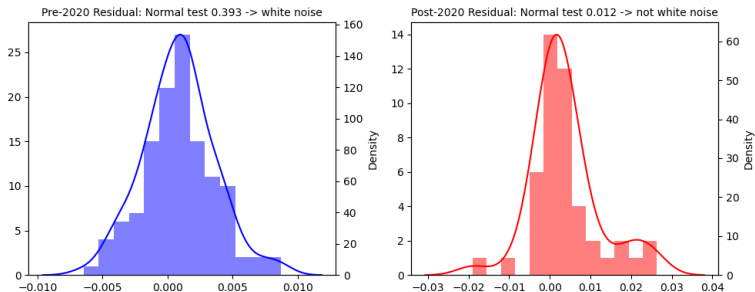
$$CPI_t - CPI_{t-1} = \pi_t = \alpha + \beta_1 t + \beta_2 s_{t|s} + \epsilon_t$$

The post-pandemic up-tick in inflation can be identified as a divergence from this model. This strategy only holds for a limited period.



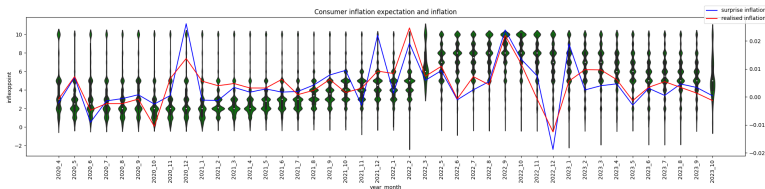
Testing surprise inflation for white noise

The above model only is a good model if its residual ϵ_t is white noise. The test for normality suggests it is. The post-pandemic deviation from the model is not white noise. It may thus be interpreted as surprise inflation from the consumer's point of view.



Consumer inflation expectation

Comparing inflation expectation and surprise as well as realised inflation a pattern appears. Inflation expectation lag behind realised inflation. Spikes in surprise inflation do not seem to affect expectation by much.

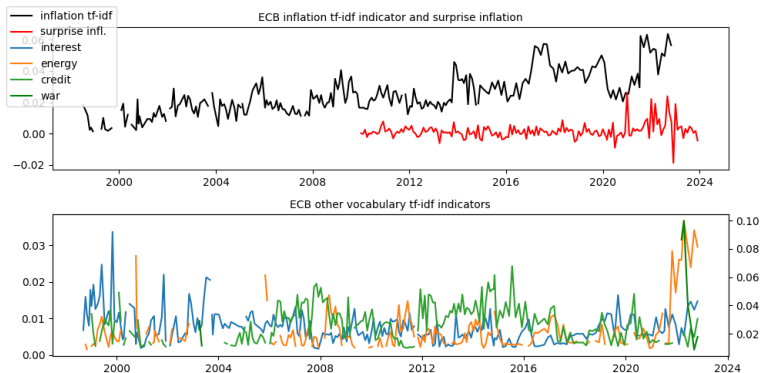


The odd shape of the violin plot stems from frequent indication of discrete round inflation values. A nice example of the round-number bias.

ECB reaction to inflation

Unsurprisingly ECB speeches have been for a long-time concerned with inflation. This is potentially because of previously too low inflation as well as its recent surge.

Analysis of news-paper articles will likely present another picture. I suspect inflation mentions to only be recently on the rise.



As validation of the Term-Frequency-Inverse-Document-Frequency (TF-IDF) I have provided other topics, likely related to pas and current crisis.