

A Discussion of

Combining Bayesian VARs and Survey Density Forecasts: Does It Pay Off?

Philippe Goulet Coulombe

goulet_coulombe.philippe@uqam.ca

ESG UQÀM

Chaire en Macroéconomie et Prévisions

Cleveland Fed, October 2022

Context

- It is well known the SPF median point forecast is hard to beat.
- It is also well known that BVARs density (especially those with stochastic volatility) forecasts are rather decent.

Also

- The economic mechanism behind BVAR forecasts is mostly understandable.
- The SPF is certainly backed by economic thinking, but from our perspective, it is a black box.

Like many things in econometric life, combining stuff can harness the qualities of both components.

What the paper does

- It combines SPF and various BVARs via a principle way.
- It has an interesting result : tilting the BVARs density's location pays off, tilting the scale does not.
- Overconfidence could explain the latter. Or the very design of the survey around critical episodes, like 2008.

When does it pay off?

- They consider a Covid case study. But there, ironically, it seems like adding SPF information about variance actually... helps. Because *linear* models explode.
- So judgment is useful during periods of high uncertainty as the authors suggest... but then, 2008 was almost equally uncertain, and there, tilting to the 2nd moment was no good.
- Perhaps the usefulness of the SPF 2nd moment is $f(\text{pertinence of judgment})$ which is $f(\text{unprecedentedness of economic conditions})$.
- Maybe some rolling-window log score could shed some light. Maybe not.

Perspectives from a non-BVARista -- Volume I

- The paper discussed first and second moment.
- Third moment is quite popular these days, and not without reason: inflation tail risk, GDP growth tail risk.
- **Q1:** What should we expect from the SPF third moment and its pertinence for BVARs? Can it be utilized in BVARs with random walks for both variance and skewness? Are the survey bins too rough?

Perspectives from a non-BVARista -- Volume II

- There is ever-accumulating evidence that nonparametric nonlinearities matter for modeling economic aggregates – especially during uncertain times.
- Impulse responses and their uncertainty are trivially obtained for machine learning-based VARs. They can even model the covariance matrix via a good old likelihood based estimation.
- Healthy and targeted regularization (aka well-designed priors) are always welcome. So mixing in SPF stuff has a bright future.
- **Q2:** how could this paper's ideas be applied to a more (post-)modern class of VARs?
- **Q3:** should we expect the recommendations (m1 vs. m2) from this paper to still hold?

Wrapping Up

- This paper provides a principled way of including SPF survey information to improve BVAR-based density forecasting.
- This work and eventual extensions will be a useful addition to central bankers' econometric toolkit.