

Discussion of
“State-Dependent Forecasting in Volatile Times”
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Overview

- Data: In volatile times, professional forecasts show
 - more frequent and larger revisions
 - lower precision, weaker role of consensus, more disagreement
- ⇒ Pass-through of m.p. shocks to forecasts stronger, more persistent in volatile times
 - IRFs of forecasts to identified MP shocks, by regime
- Model: Forecasting model with **fixed cost**, **regime-switching** and **imperfect info** can rationalize patterns
- Approach:
 - Bloomberg ECFC survey on US annual CPI forecasts (2008-2024) ~100 forecasters/year, **fixed-event panel**
 - Baley & Turén (2023) model of lumpy forecasters + regime-switching inflation + learning about the latent regime

Position in the Literature

- Large lit on state dependence in pricing adjustment driven by aggregate volatility
- **This paper:** brings state dependence in adjustment to the formation of professional forecasters' **reported** expectations, subject to noisy info and strategic considerations
- **Aggregate volatility significantly changes the dynamics of forecast updating**
 - ⇒ **Speaks directly to how central banks should read survey data in turbulent times**

My Discussion

1. Understanding the mechanism
2. A closer look at Fact III
3. Disciplining the quantitative model

Mechanism

- Note: non-trivial to match set of seemingly conflicting facts
- Model achieves this through clever information structure

Information Structure

- In each period forecaster information set
 - history of monthly realized inflation values x^{t-1}
 - history of monthly consensus forecasts F^{t-1}
 - private binary signal s_t on regime type: H vs L
- Latent objects to infer: volatility regime *and* current monthly inflation
- Decisions to make: whether or not to adjust forecast and if so, what new forecast to set
- BUT:
 - RPE for consensus, assumed to be random walk with noise \Rightarrow no info content
 - no other news about regime/inflation available to forecasters
 - will come back to these

Results

- Menu cost model \Rightarrow higher vol yields **more frequent, larger adjustments**
 - modest widening of perceived inaction bands (option effect) dominated by more frequent crossing (volatility effect)
 - standard Ss behavior [*e.g.*, Baley & Blanco, 2021; Vavra, 2014]
- *Despite this* higher vol also generates **lower forecast precision**
 - consequence of no news about the state beyond binary regime signal
 - forecasters might have high confidence they are in H but don't have more accurate info about the realized shock
 - even with perfect regime identification, $\sigma_H > \sigma_L$ raises unforecastable variance

Results

- But just the lower precision does not sufficiently **widen cross-sectional dispersion** in H
 - data also want asymmetric signal informativeness: in H a few contrarians are pulled far from a high prior
 - observing $s = 1$ is only mildly informative: 90% under H vs. 62% under L
 - observing $s = 0$ is very informative: 38% under L vs. 10% under H

Note: No idiosyncratic shocks needed to generate both more adjustment and higher dispersion!

Results

Note: Estimated signal asymmetry suggests strong payoff asymmetry

- cost of missing regime H is much larger than cost of missing L

→ RI agent would economize on information by **reallocating accuracy from L to H**

But then RI agent facing the actual loss function (forecast accuracy on π , not u) would also **optimally allocate attention to inflation-path information**, not just to the regime classification

→ Richer info structure : harder (!) but may help increase size of revisions and moderate MSFE

Specifically, suppose forecasters get additional signal about π **when they decide to revise their forecasts**

Fact III

- Fact III: weaker comovement in H between individual and consensus forecasts
- **Concern: the consensus plays two** roles
 - **strategic target:** loss function with parameter r
 - **public signal:** Kalman update for the underlying π
- Paper interpretation: in H revisions are driven more by learning about the regime and less by desire to remain close to the consensus
- Alternative: in H consensus becomes less informative as a public signal hence gets lower weight in the updating of beliefs
- Under RI: in H attention further gets reallocated away from consensus toward private signals

Fact III

- Currently the paper attributes correlation to strategic complementarities
 - Splitting by consensus accuracy would help disentangle strategic from informational effects
 - To address endogeneity, should also define consensus as leave-one-out

Calibration Strategy

- Inflation process: externally estimated by regime, input into the model
 - No reason to be bounded to sample period of the forecasts → could use longer time period to better estimates of H vs L regime parameters

Sample Restrictions

- Excluding forecasts with no annual inflation revision may bias results if the share of such forecasters is changing over time/with the regime
 - Could report robustness to this exclusion

Calibration: Not Quite Out-of-Sample

- Paper's framing: “discipline on tranquil periods, then take to volatile periods”
- But two H/L ratios are in fact targets ($\text{Var}(f)$ and $RMSE$ ratios), so part of the state dependence is matched by the calibration, not predicted
- Alternatively could
 - Target $RMSE_L \rightarrow$ pin down ℓ_L
 - Target $\text{Var}(f)_H/\text{Var}(f)_L \rightarrow$ pin down ℓ_H
 - Leave $RMSE_H$ as untargeted prediction

Calibration: Consensus and RPE

- On the other hand, the paper pins down the noise in the consensus forecast σ_F via **one RPE consistency condition** across regimes
- But realized consensus volatility differs across regimes
 - Instead, could impose RPE consistency for each regime $\Rightarrow \sigma_{F,H} > \sigma_{F,L}$
 - Or use **empirical** consensus volatility from H vs L regimes (as with inflation)
 - Forecasters would know $\sigma_{F,L}^2$ and $\sigma_{F,H}^2$ (as they do the inflation process), and condition on their regime posterior to form a mixture over them when computing expectations about the consensus
 - \Rightarrow Strategic target is more uncertain when forecaster thinks they're in H
 - \Rightarrow Tests whether Fact III reflects weaker strategic motive or noisier strategic target

The MP Pass-Through Result

- Empirical result is strong and consistent with the model's logic
- Three suggestions to push it further:
 - Q1: Does the calibrated model match the IRFs **quantitatively**?
 - Q2: Are responses symmetric in shock **sign** ?
 - Q3: Are responses state-dependent in shock **size** ?
- Could extend model with mon pol shock and decompose its IRF into contributions from
 - larger, more frequent adjustment
 - lower precision
 - mon pol shock itself informative about the regime

Concluding Remarks

- **New and important set of facts** on professional forecast updating across the volatility cycle
- **Two especially valuable facts:** coexistence of higher adjustment and dispersion + higher imprecision; state-dependent MP pass-through
- **Lumpy-forecast model with regime switching** delivers most of the qualitative shifts and much of the magnitude
- **Open:** disentangling strategic role of consensus from its role as public signal; tightening calibration discipline on cross-regime moments; matching the MP IRFs quantitatively

References

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