Why are inflation forecasts sticky?

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Discussion by G. Chevillon (ESSEC Business School)

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Banque de France
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- Consider the case where (Alvarez et al., 2011)
  - acquiring information is costly, with cost \( \theta \)
  - updating forecast is also costly, with cost \( \psi \)
Assumptions

- **Assumption 1:** Optimal forecast is a Brownian Motion

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\lim_{dt \to 0} (E[\pi_{t0+h}\mid I_{t+dt}] - E[\pi_{t0+h}\mid I_t]) \equiv d\pi^*_f(t) = \sigma dB(t)
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- e.g. $\pi_t \sim AR(1)$ then $\Delta\pi_f^*(t_0 + j) = \rho^{h-j}\epsilon_{t+j}$

▶ inflation is continuous: no jumps – supply side shocks (oil shocks)?

▶ inflation is nonstationary without short-run dynamics (Stock & Watson, 2007)
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Dynamics of the "forecasting gap"  \[ \tilde{\pi}_f(t) = \pi_f(t) - \pi_f^*(t) \]

\[
\tilde{\pi}_f(t) - \tilde{\pi}_f(t_0) = \pi_f(t) - \pi_f(t_0) - (\pi_f^*(t) - \pi_f^*(t_0)) \\
= \pi_f(t) - \pi_f^*(t) = E_{t-\delta}\pi_{t_0+h} - E_t\pi_{t_0+h} \\
= -\sigma \int_{t-\delta}^t dB(s) = -\sigma [B(t) - B(t - \delta)]
\]

hence conditionally on \( I_{t_0} \),

\[
\tilde{\pi}_f(t) = \tilde{\pi}_f(t_0) - \sigma [B(t) - B(t - \delta)] \sim N(\tilde{\pi}_f(t_0), \sigma^2 \delta)
\]

careful with the persistence induced by \( B(t) \).
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- Why? one does not need to update information to nowcast $t_0 + h$. 

Is there a way to update information (cost $\theta$) yet not adjust the forecast (cost $\psi$) in the model, only $\psi$ bites.

You claim to be a result that if there is an adjustment at $T$, then it is a full adjustment to $t_0 + T$. It seems an assumption instead ($\delta$?).

So is the paper more about information or forecast rigidity?

Bellman equation

Loss function is Average discounted Mean Square Forecast errors

When $J = 0$, the update (if any) is at $T = h$, so no min

When $J = 1$, is $\theta$ paid at $t_0 + T$ and $t_0 + h$? (notice $h$ does not appear)
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4. **Notation**: $\lambda_i,t,h$ is an indicator for updates whereas $\lambda(i,h)$ is unconditional probability.
A nice topic
A nice idea
A nice paper to read!
Thanks!