EXPERIENCING INFLATION

ECB FORUM ON CENTRAL BANKING

Panel 2: The role of inflation expectations in monetary policymaking

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**Step 1: Inflation expectations reflect the lived reality of households (Experience Effects)**

Disagreement about future inflation (MSC)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Age &lt; 40 fit</th>
<th>Age 40 to 60 fit</th>
<th>Age &gt; 60 fit</th>
<th>Age &lt; 40 act.</th>
<th>Age 40 to 60 act.</th>
<th>Age &gt; 60 act.</th>
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Fitted and actual $E[\pi]$ relative to full-sample c.s. mean (4-quarter MA)
When forming inflation expectations, individuals put a higher weight on realizations experienced over their life-times than on other available historical data.

- Similar to adaptive learning: people learn following simple “rules of thumb” (e.g., Bray 1982; Marcet and Sargent 1989)
- Different from adaptive learning: people learn (more) from data realized during their lifetimes. (adaptive learning: all historical data)

Implicit weighting of past experiences very similar to weighting pattern in other applications, e.g., stock market!

- Roughly linearly declining weights.

Significant impact on individual financial decisions, namely, long-term nominal-rate borrowing and lending (tenure, ARM/FRM, refi, bonds).
Survey of NZ managers: “How do you typically form your inflation expectations?”

Top 4 answers:

- Media
- Meetings and discussions (with co-workers and families)
- Shopping experience
- Prices of competitors and suppliers
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Top 4 answers:

- Media
- Meetings and discussions (with co-workers and families) ← Information Resonance
- Shopping experience
- Prices of competitors and suppliers
  - Born in Germany in 1914 into a family of bankers.
  - Lived through Germany’s hyperinflation in 1923.
  - Emigrated to the US in the 1930s.

Wallich dissented 27 times (!) during his tenure on the Fed Board, the highest number of dissents in Federal Reserve history, decades later.

**Staff forecast**: Greenbook forecast.

**Experience-based forecast**: AR(1) model forecast estimated based on weighted life-time inflation data for each FOMC member.
Why?

- Every time we have a new experience, our brain forms a connection between two neurons (synapse).
  - Synapses tell our body how to react to the world around us. The govern the way we experience life.
- The brain can reorganize pathways, create new connections, and even create new neurons (neuroplasticity) in response to learning, experience, and memory foundation.
- Generally, young brains tend to be more sensitive and responsive to experiences than older brains. But the brain never stops changing.
Synaptic Tagging

- How and how often we make an experience matters.
- Repeated stimulation of hippocampal neurons can induce a prolonged increase in synaptic strength (long-term potentiation (LTP)), Cf. Frey and Morris (Nature 1997, Trends in Neuroscience 1998)
- Prior or subsequent “learned knowledge” has very limited power to undo the effects.

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- Trauma with a big T: German Hyperinflation, Great Depression, Pandemics
- trauma with a small t: Daily Exposure, daily worry about food, prices, unemployment
- Other repeated (non-traumatic) exposure, including positive experiences
Implications for Monetary Policy

1. **FREQUENCY**: explains roles of food/gas prices, personal shopping → MP: acknowledge rather than focusing on core inflation

2. **DURATION**: inflationary experience extra-powerful if it remains high for a long time; the effect will last for a long time → MP: to be accounted for in policy choices (Cf. recession experience)

3. **EMOTIONS**: “panic” = strong anchoring in memory → MP: acknowledge consumer reality, reassure, utilize “information resonance”

4. Link **ANCHORING** —“credibility”, **DE-ANCHORING** —“no credibility”?  
   - “Expectations show whether central bank is doing its job” but not in the sense of “being credible,” but in the sense of “fighting the inflation reality”  
   - Monetary policy tools such as forward guidance less powerful than our standard macro models would imply.