LONG-RUN INFLATION EXPECTATIONS
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Inflation in February

March 14, 2023

+6.0% in February
+5.5% excluding food and energy
Jerome Powell (March 22, 2023): “Despite elevated inflation, longer-term inflation expectations appear to remain well anchored.”
This paper: a statistical model of long-term inflation
Yogi Berra: “It’s tough to make predictions, especially about the future.”
COMMENT #1: FUNDAMENTALS

Inflation expectations, %

Gas price, $/gallon

Gas price

Inflation expectations (Michigan), 1-year
COMMENT #2: WHAT IS ANCHORED EXPECTATIONS?

- Beliefs are close to the inflation target
- Beliefs are not dispersed (little disagreement)
- Confidence in forecasts (small uncertainty)
- Small forecast revisions
- No comovement in long- and short-run expectations
COMMENT #2: **WHAT IS ANCHORED EXPECTATIONS?**

- Long-term inflation expectations
- 1-year ahead inflation expectations

**Graph:**
- 10-year expectations (b=0.40)
- 5-year expectations (b=0.43)

**Legend:**
- no controls
COMMENT #2: WHAT IS ANCHORED EXPECTATIONS?

1.5 2 2.5 3 3.5

long-term inflation expectations

0 1 2 3 4

1-year ahead inflation expectations

10-year expectations (b=0.35)
5-year expectations (b=0.48)

time fixed effects
COMMENT #2: WHAT IS ANCHORED EXPECTATIONS?

10-year expectations (b=0.20)
5-year expectations (b=0.32)

time and forecaster fixed effects
COMMENT #2: WHAT IS ANCHORED EXPECTATIONS?
Uncertainty varies with the level of inflation.
COMMENT #3: UTILIZE MORE INFORMATION FROM SPF

Short-term uncertainty is correlated with the level of LT inflation expectations
Why do 5- vs. 10-year expectations differ?

slope = 0.7, R²=0.7
COMMENT #3: UTILIZE MORE INFORMATION FROM SPF

Term structure of inflation expectations: $\pi^i_{t+h\mid t} = \rho \pi^i_{t+h-1\mid t} + \text{error}$

![Graph showing the relationship between $\rho$, $R^2$, and forecasting horizon.](source: Goldstein d Gorodnichenko (2021))

Note: p-value (equality of estimated coefficients) <0.01
COMMENT #4: FORWARD INFORMATION

Practice (SPF): (80% of forecasters do this according to a special survey of SPF)

\[ x_{t+h|t}^i = \rho^h x_{t|t}^i + \{\text{add factor}\}_{t,i,h} \]

OECD: An add-factor is the adjustment made to equation-based projection over the forecasting period. For example, if an equation has under-predicted a variable in recent periods, then an "add factor" may be added to the equation if it is judged that the equation will under-predict over the forecast period as well. In short, add factors are equation-residuals applied over the forecast period.

Larry Klein: “After the preparation of preliminary predictions from the … Wharton-EFU Model, there is a discussion of the assumptions and properties of the prediction with business and government specialists. A priori information on impending labor disputes, hedge purchasing, production bottlenecks, major economic decisions and similar phenomena are then suggested for further modification of parameter or residual values, and a revised forecast in prepared.”

Add factor is information about the future (“forward information”, “news”, etc.)
Households and firms have little knowledge about the inflation target of the Fed.

source: Candia, Coibion, and Gorodnichenko (2021)
CONCLUDING REMARKS

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  o Where do expectations come from?
  o What shapes expectations?
  o What is the relationship between short-term and long-term expectations?
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  o Explore other dimensions of “anchoredness”
  o Utilize more information
  o Forward information, news, etc.
  o Compare properties across different types of agents
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• A new sense of urgency ⇒ a very timely paper