“The Missing Inflation Puzzle: The Role of the Wage-Price Pass-Through”
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What are the inflation puzzles?
Why was inflation low during the latest expansion?

Possible explanations, from the Phillips curve perspective:

\[ \pi_t = \beta E_t \pi_{t+1} - \kappa \left( u_t - u^*_t \right) + \text{Supply shocks} \]

1. Anchored inflation expectations, \( E_t \pi_{t+1} \downarrow \)
   - Central banks have become more transparent.
   - They communicate their inflation target more effectively.

2. Decline in the natural rate of unemployment, \( u^*_t \downarrow \)
   - The employer–employee matching process has improved.
   - LinkedIn and other online job services facilitate employment flows.

3. Deflationary supply shocks
   - Transitory sectoral shocks recur frequently (somewhat implausible).
   - In other words, we’ve been “lucky.”

4. A flatter Phillips curve, \( \kappa \downarrow \)
   - Perhaps, the most popular explanation for the missing inflation puzzle.
   - This paper explains why the Phillips curve flattened.
The Phillips curve has flattened nearly tenfold.
Many practitioners see wage pressures as a key link.

\[-\kappa \equiv \frac{d \pi_t}{d u_t}\]

Slope of price Phillips curve

\[\frac{d \pi_t}{d w_t} \times \frac{d w_t}{d u_t}\]

Wage-price pass-through

Slope of wage Phillips curve

The wage Phillips curve has not flattened as much.

This paper therefore focuses on the wage-price pass-through.
This paper presents evidence from disaggregated industry data. I instead look at the aggregate pass-through.

I estimate Jordà’s local projections (for each quarter $h = 0, \ldots, 20$):

$$
\pi_{t+h}^{\text{price}} = \alpha + \beta_h \pi_t^{\text{wage}} + \sum_{j=1}^{8} \delta_j \pi_{t-j}^{\text{price}} + \sum_{j=1}^{8} \zeta_j \pi_{t-j}^{\text{wage}} + \eta z_t + \epsilon_t.
$$

Caveats of relying on aggregate data:

- There are no shocks or instruments $\rightarrow$ simultaneity problem.
- Can be interpreted as a VAR with Cholesky identification, but the timing restriction is questionable.
- I interpret $\beta_h$ as reflecting conditional correlations.
Aggregate pass-through is large in the full sample. But it declined to nearly zero in the recent period.
Why did the pass-through decline? This paper offers compelling explanations.

1. The labor share has declined.
   - An intuitive explanation that holds across a range of models.

2. Import penetration increased as China joined the WTO.
   - Generally, globalization has made domestic conditions less relevant.

3. Market concentration has also increased.
   - This is a relatively contentious finding; more on the next two slides.

Difficult to distinguish one factor from another:

- These changes took place more or less simultaneously.
- They affected a broad range of industries.
- And they are often due to the same ultimate causes.
Concentration and markups

In standard models with constant markup,

\[ p_t = \frac{1}{1 - 1/\varepsilon} mc_t, \]

where \( \varepsilon > 1 \) is the elasticity of substitution (demand elasticity).

- A smaller \( \varepsilon \rightarrow \) less competition → a greater markup.

But markups may vary:

- E.g., oligopolistic competition with kinked demand.
- Intuition: firms forego markup to preserve their market share.
- As competition intensifies, pass-through from rising wages goes up.
Comments

1. The relationship between concentration and markups may be nonlinear.
   - Otherwise, wage increases will eventually erode the markup.
   - The oligopolistic competition may itself be unstable.

2. The nature of inflationary shocks matters.
   - Aggregate versus idiosyncratic shocks.
   - Persistent versus transitory shocks.
   - Demand versus supply shocks.

3. It is difficult to separate market concentration from import penetration.
   - The model requires that foreign producers do not face the same wage shock.

Other thoughts:

- Monetary policy with strong commitment can stabilize inflation.
  → Theoretical pass-through is not identifiable in the data.
- The wage-price pass-through may be nonlinear.
In lieu of conclusion

As we’re going through the Covid-19 crisis, its longer-term effects may include:
- a reversal in the globalization trends;
- less reliance on foreign trade.

This paper motivates some important questions:
- Is wage-price pass-through going to rebound?
- Will the Phillips curve become steep again?
- What is the optimal balance between the short-term benefits of monetary and fiscal accommodation and the long-term costs?