Wage-Price Spirals

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What we do

• **Applied contribution:**
  • Simple model gives inflation episode in 3 phases, similar to the one we’re going through
  • Supply constraints and limited substitutability play crucial role

• **Conceptual/theory contribution:**
  • What is a wage-price spiral?
  • Mutually reinforcing dynamics of price and wage inflation
  • Spiral = conflict = different aspirations of firms and workers for w/p
Model ingredients

- Price setting and wage setting
- Input in inelastic supply X
- Limited substitution between X and labor

- Workers and firms aspirations depend on state of labor market and cost of inputs
- Cost of input endogenous

- Simple NK structure: aspirations map to output gap
- Level of the real wage is a state variable
A “supply-constrained” demand shock

Three phases:

• Very fast response of $X$ price, non-core inflation
• Pass-through into general price inflation
• Response of wages, initially less than prices, but more persistent
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Supply shock show similar pattern

Profits go up, if $X$ interpreted as capacity

Ball, Leigh, Mishra (2022): high pass-through from non-core to core inflation
Bernanke, Blanchard (2023): energy and shortages
Why?

- Output gap creates distance between aspirations of workers and firms
\[ \pi = 0 \]

\[ \pi^w = 0 \]
In 2021 worry about being here
But we were here

\[ \pi_w > \pi \]

\[ \pi > \pi_w \]
Conflict inflation = Spiral

Conflict inflation

\[ \pi_w > \pi \]

\[ \pi > \pi_w \]

Adjustment inflation

\[ \pi^w = 0 \]

Decomposition
Conflict and spirals

• **Conflict, disagreement, disappointment** central to inflation experience

• Tension between aspirations and realizations of relative prices

• They are there in our models! We try to bring them out and expand

• How to measure it?

\[
\text{conflict inflation} = \frac{\Lambda_w}{\Lambda_w + \Lambda_p} \pi + \frac{\Lambda_p}{\Lambda_w + \Lambda_p} \pi^w
\]

• In NK framework closely related to “divine coincidence inflation” of Rubbo (2023)
In 2021 worry about being here
But we were here

\pi = 0
\pi_w = 0
\pi > \pi_w
\pi_w > \pi
Why? (Reprise)

Aspirations gap
Why? (Reprise)

- Depends on slopes of these curves

Here labor scarcity dominates:  \( \pi_w > \pi \)
Why? (Reprise)

- Depends on slopes of these curves

Here non-labor inputs scarcity dominates:

\[ \pi > \pi_w \]
Why? (Reprise)

- Depends on slopes of these curves

\[
\frac{\Lambda_p}{\Lambda_w} \frac{s_X}{\epsilon} > \sigma s_L + \eta
\]

Prices less sticky than wages

Steep mpl: low elasticity of substitution with labor

Flat mpl: Weak response of real wage demands to hot labor market
Why does inflation fall?

- Why does price inflation fall while W/P rises?
  - Price of other input falls...
    - ... supply constraints easing...
    - ... related: profit margin is high, room for real wages to recover
  - Wage increases partly already priced in (forward looking behavior)
- Conflict perspective: inflation usually causes relative prices to move; once relative prices are at a new level, are people happy with them? If not, is there a relative price at which they will eventually be happy?
- Caveats...
  - Is excess demand going away fast enough?
  - Adaptive non-rational expectations?