Discussion of Lorenzoni and Werning’s "Wage-Price Spirals"

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What the Paper Does

- Recent wage and price inflation developments
- Interpretation through the lens of a standard NK model (EHL). Two twists: continuous time + CES technology
- Connection between "wage-price spirals" and "conflict inflation"
- A number of interesting results along the way (e.g., analytical condition for countercyclicality of the real wage)
Outline

- The facts
- Inflation as conflict
- Conflict inflation and wage-price spirals
- Departures from the standard model
The Facts
Accounting for trends
CPI and Wage Inflation (Demeaned)
Core PCE and Wage Inflation (Demeaned)
The Facts

- Accounting for trends
- Transitory or permanent shocks?
Transitory or Permanent Shocks?
Inflation as Conflict

- Price inflation in the NK model

\[ \pi_t = \Lambda_p \int_t^\infty e^{-\rho(s-t)} \left[ (w_s - p_s) - (mpl_s - \mu^P) \right] ds \]
Inflation as Conflict

- Price inflation in the NK model
  \[ \pi_t = \Lambda_p \int_t^\infty e^{-\rho(s-t)} \left[ (w_s - p_s) - (mpl_s - \mu^p) \right] ds \]

- A more conventional interpretation
  \[ \pi_t = \Lambda_p \int_t^\infty e^{-\rho(s-t)} \left[ \mu^p - \{p_s - (w_s - mpl_s)\} \right] ds \]
  \[ = \Lambda_p \int_t^\infty e^{-\rho(s-t)} (\mu^p - \mu^p_s) ds \]

- Similarly, for wage inflation
  \[ \pi_t^w = \Lambda_w \int_t^\infty e^{-\rho(s-t)} (\mu^w - \mu^w_s) ds \]
  \[ \Rightarrow \text{"inflation as a result of markup misalignment"} \]

- Spirals: \( \downarrow \mu^p_t \Rightarrow \uparrow \pi_t \Rightarrow \downarrow \omega_t \Rightarrow \downarrow \mu^w_t \Rightarrow \uparrow \pi^w_t \Rightarrow \downarrow \mu^p_t \Rightarrow ... \)

- Advantages of "markup interpretation"
  (i) constant "targets"
  (ii) captures better the perspective of individual price and wage setters
No formal definition, two coexisting views in the paper:

- (i) mutually reinforcing dynamics between price and wage inflation
- (ii) episode with both wage and price inflation simultaneously positive (above trend)

View (i) is embedded in the model, operates at all times

Focus on conditions and implications of (ii)

Alternative definitions (e.g. Alvarez et al. IMF WP 2022: three successive quarters with accelerating price and wage inflation)
Conflict Inflation and Wage-Price Spirals

- **Definition of "conflict inflation"**

\[
\Pi_t \equiv \frac{\Lambda_p \Lambda_w}{\Lambda_p + \Lambda_w} \int_t^\infty e^{-\rho(s-t)}\left[(mrs_s - mpl_s) + (\mu^w + \mu^p)\right]ds
\]

- **Result #1**

\[
\begin{align*}
\pi_t &= \Pi_t - \alpha \omega_t \\
\pi_t^w &= \Pi_t + (1 - \alpha) \omega_t
\end{align*}
\]

where \(\alpha \equiv \frac{\Lambda_p}{\Lambda_p + \Lambda_w}\).

\(\Rightarrow\) connection with wage-price spirals

- **Result #2**: "Divine Coincidence" holds for conflict inflation

\[
\Pi_t = 0 \text{ for all } t \iff y_t - y_t^n = 0 \text{ for all } t
\]
Conflict Inflation

- From the literature we know:

\[(1 - \alpha)\pi_t + \alpha\pi^w_t = 0 \text{ for all } t \iff y_t - y^n_t = 0 \text{ for all } t\]

where \(\alpha \equiv \frac{\Lambda_p}{\Lambda_p + \Lambda_w}\)

\[\Rightarrow \Pi_t = (1 - \alpha)\pi_t + \alpha\pi^w_t\]

"conflict inflation" = "composite inflation"

- Novelty here: connection with wage-price spirals

- **Remark #1**: note that: \(\Pi_t > 0\) necessary for wage-price spirals, but **not** sufficient!

- **Remark #2**: for any weighted-average \(\Pi_t = (1 - \gamma)\pi_t + \gamma\pi^w_t\)

\[\pi_t = \Pi_t - \gamma\dot{\omega}_t\]

\[\pi^w_t = \Pi_t + (1 - \gamma)\dot{\omega}_t\]

In what sense \(\Pi_t \equiv (1 - \alpha)\pi_t + \alpha\pi^w_t\) is a better index of wage-price spiral?
Normative implications:
- optimality of strict output gap stabilization (hence $\Pi_t = 0$) in a knife-edge (symmetric) case (Woodford (2003))
- near-optimality more generally (Erceg et al. (2000), Woodford (2003)) [also implicit in the present paper]

Corollary (new, but not stressed): *wage-price spirals are inconsistent with optimal policy*
Departures from the Standard NK Model

- Departure #1: Deanchoring of inflation expectations

\[ E_t^f \{ \pi_s^w \} = \pi_t^{w,e} \quad \text{for } s \geq t \]

\[ \pi_t^w = \gamma (\pi_t^w - \pi_t^{w,e}) \]

- Departure #2: sluggish adjustment of "real wage aspirations" ("real rigidities")

Implications:

\[ \Rightarrow \text{slower adjustment of price and wage adjustment to shocks} \]

\[ \Rightarrow \text{highly persistent wage-price spirals} \]

- Suggestion #1: analyze independent role of real rigidities

- Suggestion #2: optimal monetary policy analysis

- Suggestion #3: relate to indexation!
Concluding Remarks

- Thought-provoking paper
- Interesting application of the standard NK model to the interpretation of current developments, around the idea of wage-price spirals.
- Somewhat skeptical about the value added of "inflation as conflict" and "conflict inflation" in the standard NK model (may be different in other models)
- Opens avenues worth exploring in future research (deanchoring and real rigidities)