

Discussion of: "Uncertainty Through the Production Network" by Cacciatore and Candian

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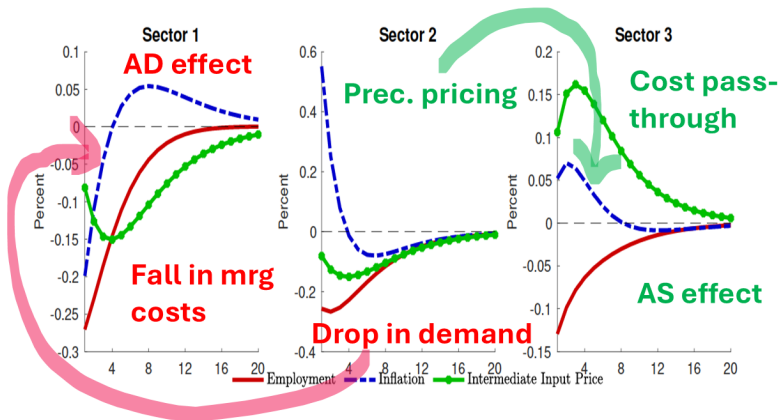
¹I thank Giovanni Pellegrino for useful exchanges.

What Matteo and Giacomo do and find

How does sectoral uncertainty propagate through a production network?

- ▶ This paper's 2 contributions:
 - 1 Empirical: Sectoral uncertainty shock hitting sector j , effects:
 - a $\uparrow \pi$ and $\downarrow$ empl. in sector j (direct effect)
 - b $\uparrow \pi$ and $\downarrow$ empl. in downstream sectors (spillover, "AS" shock)
 - c $\downarrow \pi$ and $\downarrow$ empl. in upstream sectors (spillover, "AD" shock)
 - 2 Theoretical: "NNK" framework (NK framework with network effects) and sectoral uncertainty shocks replicates the facts

NKK: Sectoral uncertainty as AS/AD shocks



- **Precautionary pricing key** (Fernández-Villaverde et al. 2015, Born and Pfeifer 2020; Bianchi et al. 2023, Andreasen et al. 2024)

My take on Matteo and Giacomo's paper

- ▶ **Elegant and insightful paper**, modeling & policy relevant - classic Cacciatore-Candian!
- ▶ **Merits** of this contribution? Many!
 - 1 **Focus on sectoral uncertainty** (vs. aggregate), **proxies for sectoral fin. uncertainty/shocks**
 - 2 **Clarifies the nature(s) of uncertainty shocks** (not necessarily demand shocks)
 - 3 **Provides a "broad" theoretical intuition** (e.g., global shocks, China (upstream) vs. US (downstream); commodity exporters (upstream) vs. importers (downstream), ...)

My comments

► Comments will mainly focus on:

- 1 Two-regime inflation view
- 2 Policy recommendation in NNK framework
- 3 [Miscellaneous]

Two-regime inflation view

Two-regime inflation view

The screenshot displays the BIS (Bank for International Settlements) website. At the top, the BIS logo is on the left, and a search bar is on the right. Below the logo is a navigation menu with links: Home, About, Research & publications, Innovation, Committees & associations, Central bank hub, Statistics, Banking, and Media & speeches. The 'Research & publications' link is highlighted. Below the navigation menu, a breadcrumb trail reads: Home / Research & publications / BIS Papers / The two-regime view of inflation. On the left side, there is a sidebar for 'Research & publications' with links to 'Research at the BIS', 'Fellowship programmes', 'Trending topics', 'BIS authors', 'Annual Economic Report', and 'Quarterly Review'. The main content area features the title 'The two-regime view of inflation' above a large image of wooden blocks spelling 'LOW INFLATION' with 'HIGH' written vertically on the 'L' and 'O'. Below the image, the paper details are listed: 'BIS Papers | No 133 | 20 March 2023', 'by Claudio Borio, Marco Jacopo Lombardi, James Yetman and Egon Zakrajsek', and 'PDF full text (1.809kb) | 53 pages'.

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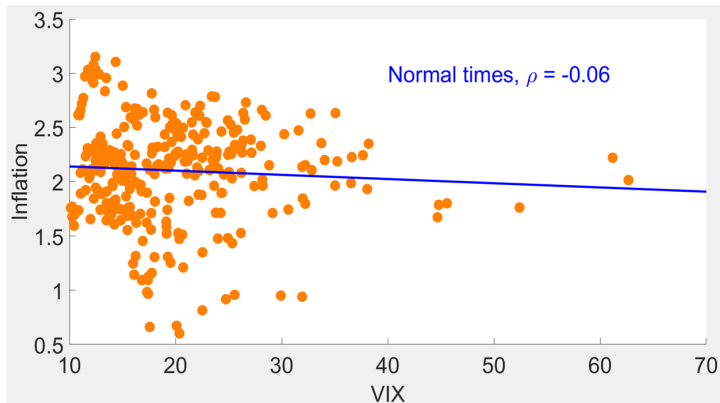
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The two-regime view of inflation

BIS Papers | No 133 | 20 March 2023
by Claudio Borio, Marco Jacopo Lombardi, James Yetman and Egon Zakrajsek
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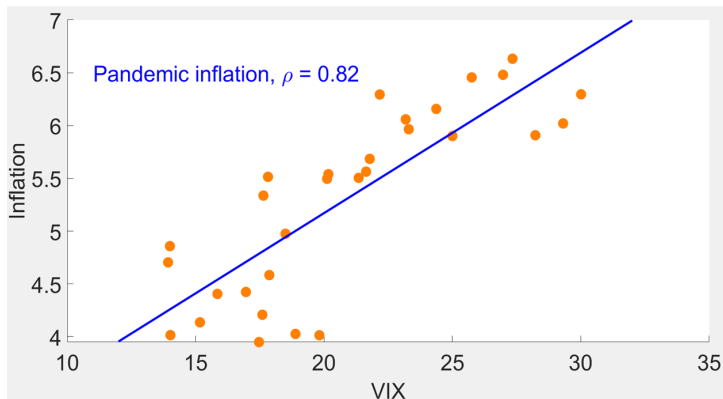
- Uncertainty-inflation relationship: State-dependent?

Uncertainty and inflation in normal times



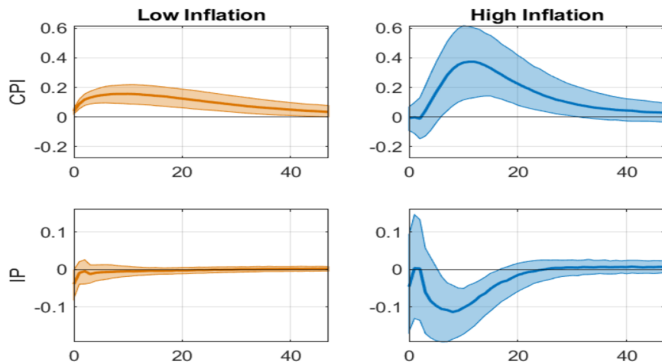
- ▶ Comovement positive (negative) for 2/3 (1/3) of the sectors
- ▶ Possible interpretation: "upstream + downstream ≈ 0 "

Uncertainty and inflation during the pandemic



- June 2021 - November 2023 (inflation $> 4\%$)

Aggr. uncertainty shocks more powerful during the pandemic



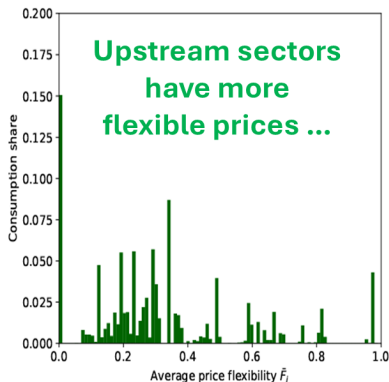
► Castelnovo, Pellegrino, and Særkjær (2025)

What's behind the switch?

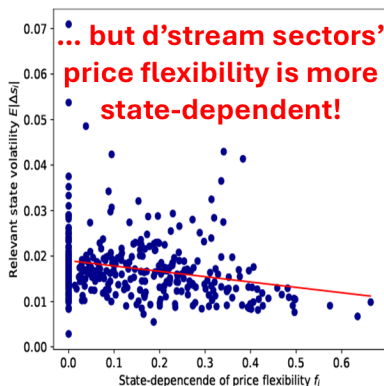
- ▶ Empirical: Time-varying role played by sectoral uncertainty shocks?
 - * Larger role of common (vs. sectoral) disturbances? (global supply chain disruptions, shocks to energy/oil markets)
- ▶ Theoretical: Functioning of NNK model when inflation is high? Role of spillovers?
 - * State-dependence when big shocks occur (Antonova 2025)
 - * Trend inflation (Ascari and Sbordone 2014; Castelnuovo, Pellegrino, Særkjær 2025)

State-dependence is relevant, above all downstream

(a) Average price flexibility

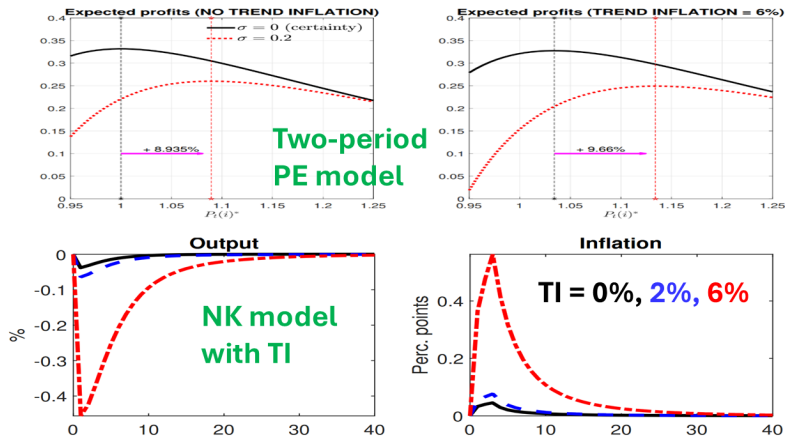


(b) State-dependence of price flexibility



- ▶ State-volatility proxy for price flex, Antonova (2025)
- ▶ Downstream sectors more relevant during the pandemic?

Precautionary pricing when inflation is high



- Precautionary pricing "enhanced" by TI (Castelnuovo, Pellegrino, Særkjær 2025) across sectors
- Diminished role of spillovers? (Common vs. sectoral uncertainty)

Policy recommendation in NNK framework

Policy recommendation

- ▶ Uncertainty shocks **look like** supply shocks
- ▶ One-sector-only models: Optimal monetary policy (SIT) implies no inflation-output gap trade-off (Cho, Han, Oh, Rogantini Picco 2021)
- ▶ Intuition: SIT "kills" precautionary pricing, countercyclical markup, output gap response (Castelnuovo, Pellegrino, and Særkjær 2025)
- ▶ How about NNK model? Should mon. policy target aggregate or sectoral inflation?

Policy recommendation

- ▶ Compare different Taylor rules with:
 - i) Aggregate inflation, SIT vs. FIT
 - * Sectoral implications? Firms' profits, markups, price dispersion
 - ii) Sectoral inflation, conditional on the same policy coefficient
 - * What sector(s) should be targeted? Upstream (source of inflation) vs. downstream (aggregate demand-type of effects)

Wrap up

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- ▶ Beautiful contribution on sectoral uncertainty and inflation
- ▶ I would like Matteo and Giacomo to:
 - 1 Think about normal times vs. pandemic inflation when it comes to the role of sector-specific vs. common uncertainty shocks and their effects
 - 2 Exploit their NNK model to provide us with policy recommendations

If you work on uncertainty, you gotta read this paper!

Thank you very much!

Miscellaneous

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- ▶ Sectoral shocks: Generated regressors, bands?
- ▶ Empirical evidence: Lower bound more than point estimate?
"Cascading shocks" à la Diercks, Hsu, Tamoni (2024)?
Relative upstream/downstream relevance?
- ▶ Controls: Oil/energy shocks? (above all if pandemic included in the analysis) Information shocks à la Jarocinski and Karadi (2020), Miranda-Agrippino and Ricco (2021)?
- ▶ Network multiplier for aggregate inflation/employment:
Quantification? Saijo (2025)