Disinflation in the Euro Area...but Don't You (Forget About Inflation Volatility)

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Introduction

- Most market participants would agree that disinflation is likely to continue.
- Yet, monetary policy remains restrictive.
- Today I will argue that central banks' skepticism for easing policy is justified.
- I will even claim that moving back to strict inflation targeting could be desirable.

Outline

- What has driven EA and US inflation?
- Highlight some unnoticed facts about inflation dynamics.
- A possible switch in Inflation Volatility.
- What should monetary policy do?

SVAR for EA and USA

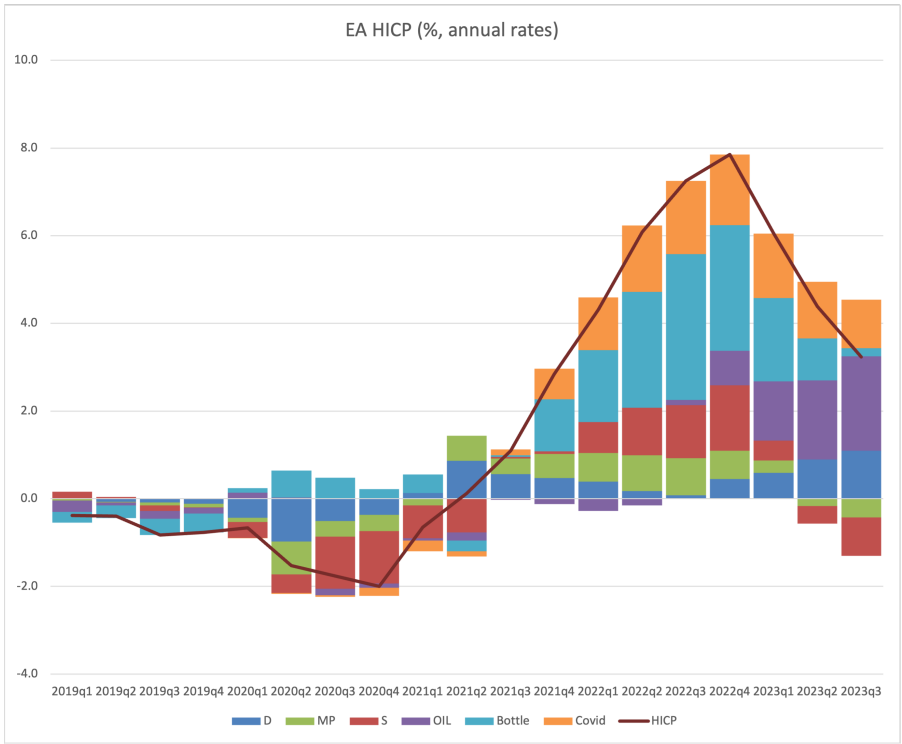
Kataryniuk, Martinez, Pappa and Rast (2024) use SVAR:

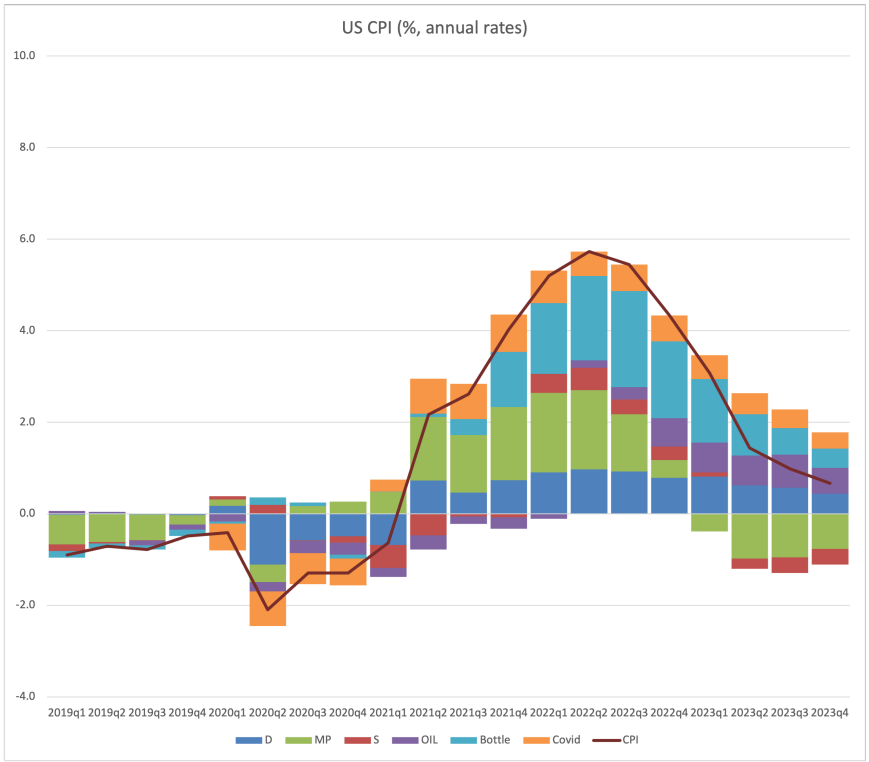
$$Y_t = AY_{t-1} + Be_t$$

- Y_t: [real GDP growth , CPI inflation, Interest rate, real oil price growth, and supply chain pressure –bottlenecks- index (Burriel et al. 2023)]
- Include COVID dummy
- e_t uncorrelated structural shocks, identified using sign restrictions to:

$$\mathbf{e} = \begin{bmatrix} demand\ shocks \\ monetary\ policy\ shocks \\ supply\ shocks \\ bottleneck\ shocks \\ oil\ price\ shocks \end{bmatrix} \quad (1)$$

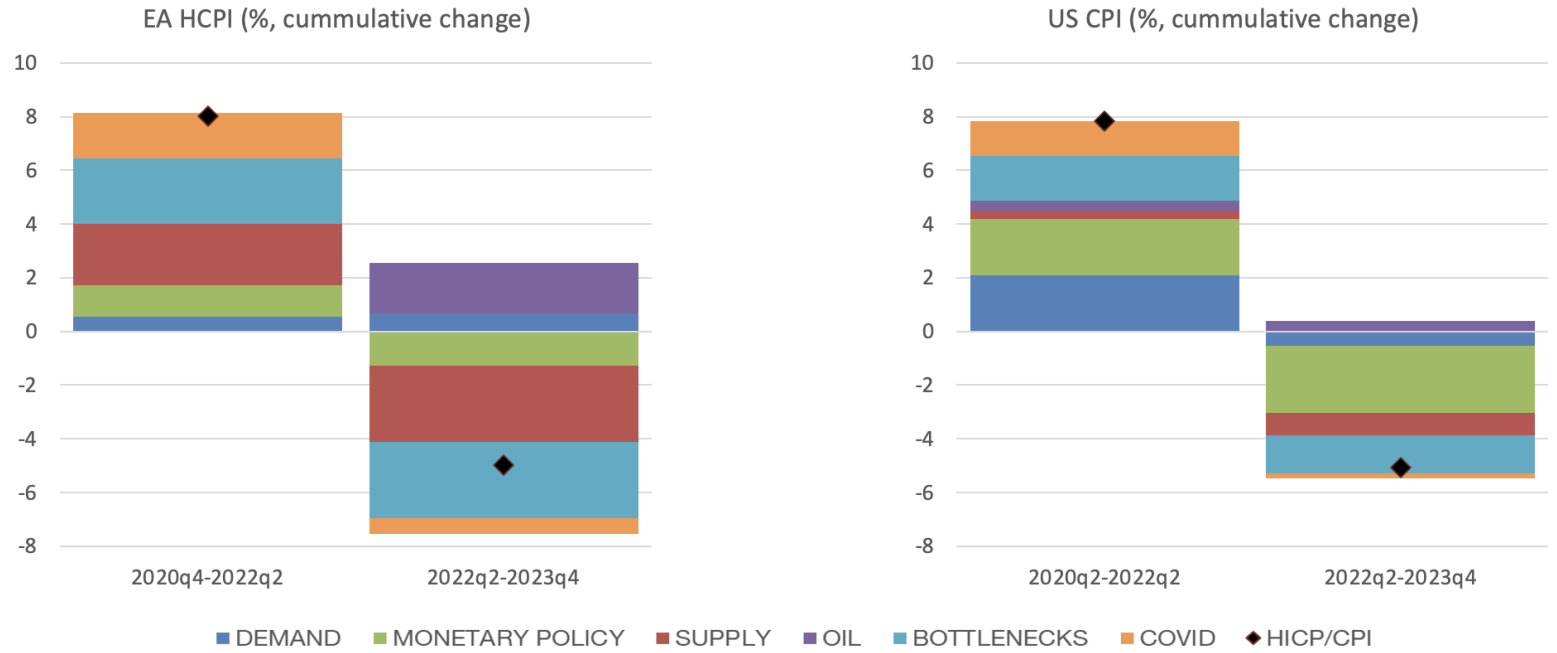
CPI in the EA and the US





- Elevated inflation was largely caused by surging energy prices and persistent supply constraints in EA.
- Demand shocks also important in the US.

Shocks contributions

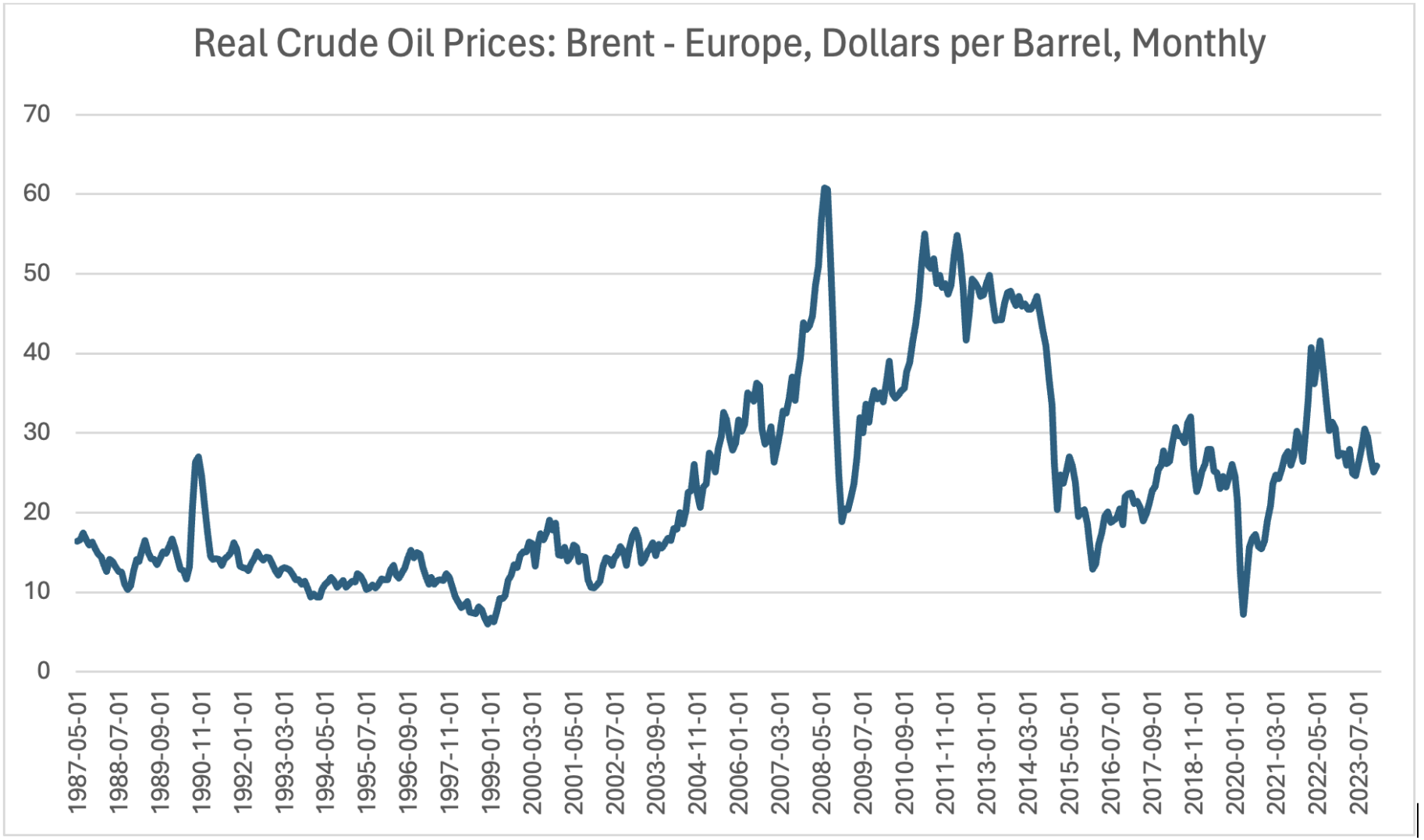


Sources: FRED St Louis, Eurostat, Bank of Spain and own calculations.
Notes: Historical decomposition (mean deviations) based on a structural VAR model using quarterly data from the US (1990Q2 to 2023Q4) and the euro area (2007Q1 to 2023Q4) of the following variables: real GDP, HICP/CPI, Spot Oil Price (WTI or Brent), effective funds rate from the effective federal funds rate or the ECB deposit facility rate (DFR) and the bottleneck indices from Burriel et al (2023). Structural shocks are identified through exclusion and sign restrictions, see Katarvniuk, Martinez-Martin, Pappa and Rast, 2024 (forthcoming).

- Supply factors impacted inflation more forcefully in EA.

Are more adverse supply shocks likely to occur?

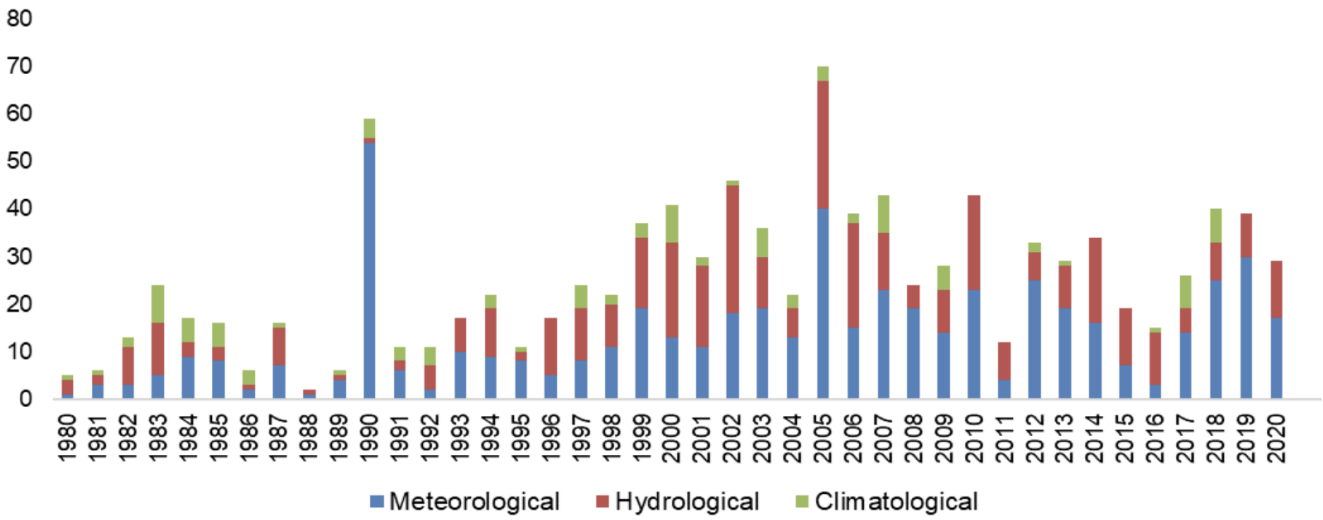
Medium run inflation: Oil price volatility



- Real oil price standard deviation has increased from 3.5 before 2004 to 10.9 post 2004.

Medium run inflation: More Natural Disasters

Graph 1: **Number of weather- and climate-related events in the EU, by disaster subgroup, 1980-2020**



Note: Meteorological (e.g., extreme temperatures, storms), hydrological (e.g., floods), climatological (e.g., droughts, wildfires).

Source: European Commission, based on The Emergency Events Database (EMDAT; CRED, UCLouvain).

Graph from Gagliardi et al. (2022).

- Gautier et al. (2023): Disasters induce temporary, but statistically significant, rise in headline consumer prices
- Beirne et al. (2022): Disasters have significant positive inflation effects, particularly pronounced for prices of food and beverages.

Medium run inflation: Green transition and carbon taxes

Country	Enacted	Initial rate	2018 rate	Coverage
Finland	Jan 1990	2.14	70.65	0.36
Sweden	Jan 1991	44.72	128.90	0.40
France	April 2014	9.30	57.57	0.35
Poland	Jan 1990	0.68	0.16	0.04
Portugal	Jan 2015	8.99	11.54	0.29
Spain	Jan 2014	31.82	30.87	0.03

From Konradt and Weder di Mauro (2023): carbon taxes measured as USD per ton of CO2e emissions, coverage as the share of total GHG emissions covered by the tax in an economy.

- Many countries lag behind the green transition and expected increases in carbon taxes
- Airaudo, Pappa and Seoane (2024): Increases in relative prices can pass through to inflation, especially if monetary policy not sufficiently tight.

Why worry about adverse supply shocks?

Arndt and Enders (2024) document a more substantial pass-through of cost and monetary policy shocks during periods of volatile inflation.

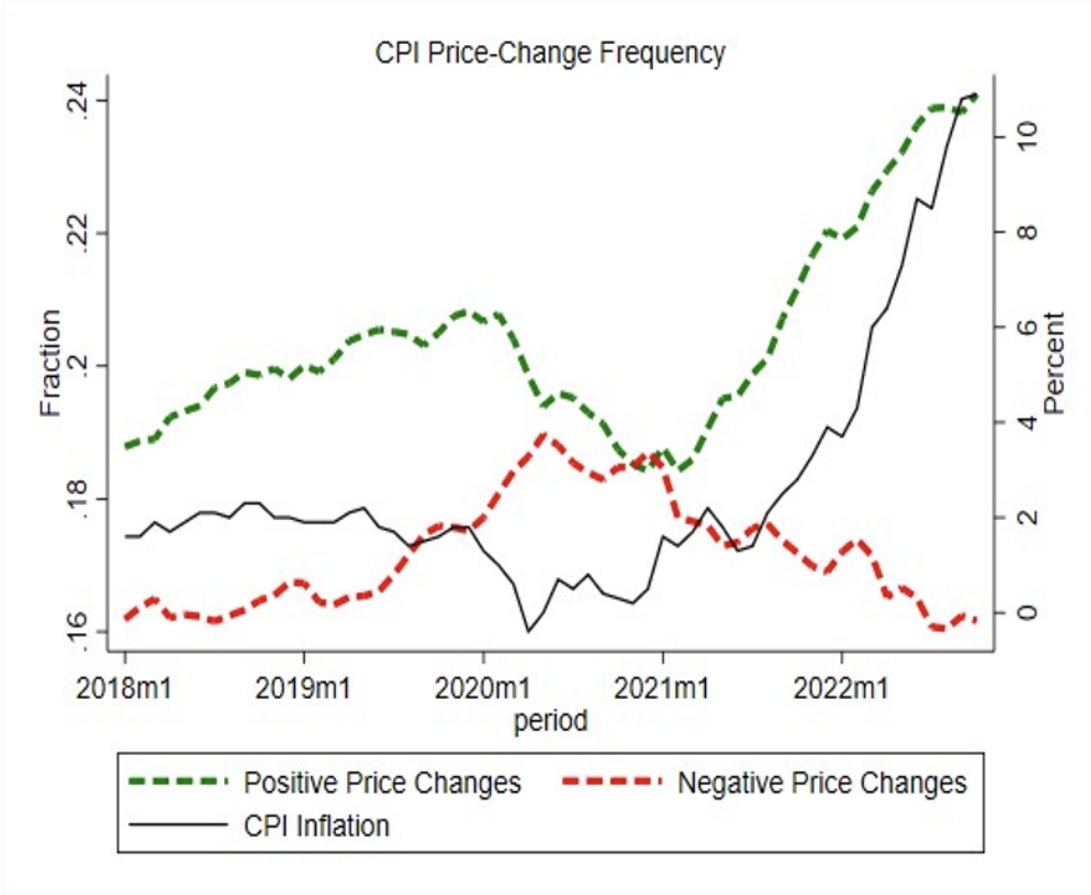
Cavallo, Lippi and Miyahara (2023), focusing on food and beverage prices, document a sizeable increase in the frequency of price adjustments following the large energy shocks of 2022.

Blanco, Boar, Jones, and Midrigan (2024), using UK micro data, document higher frequency of price changes during recent rise in inflation.

Ahlander, Klein and Pappa (2024), using Swedish firm level data, document similar state dependent pricing effects.

Ahlander, Klein, Pappa (2024)

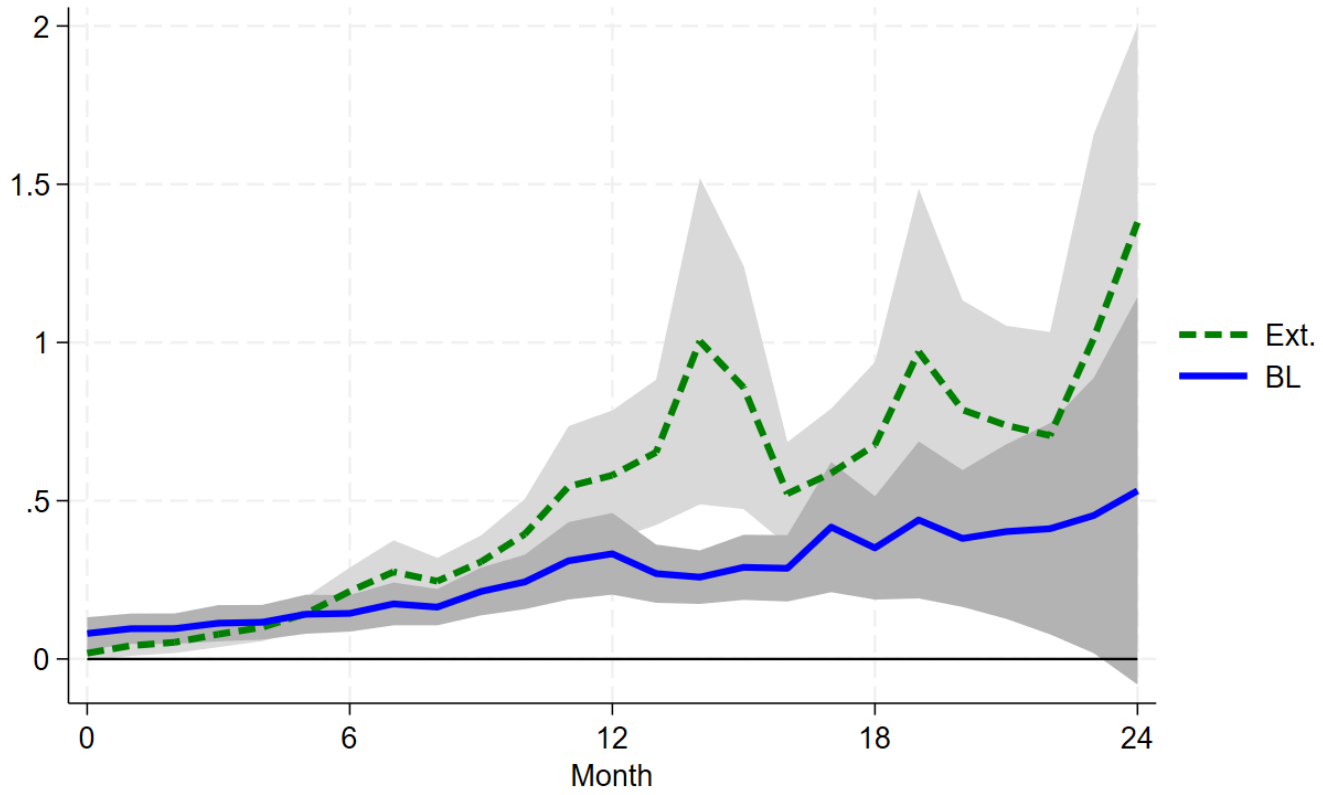
Fraction of products that change price within month increases when inflation is high



Swedish data

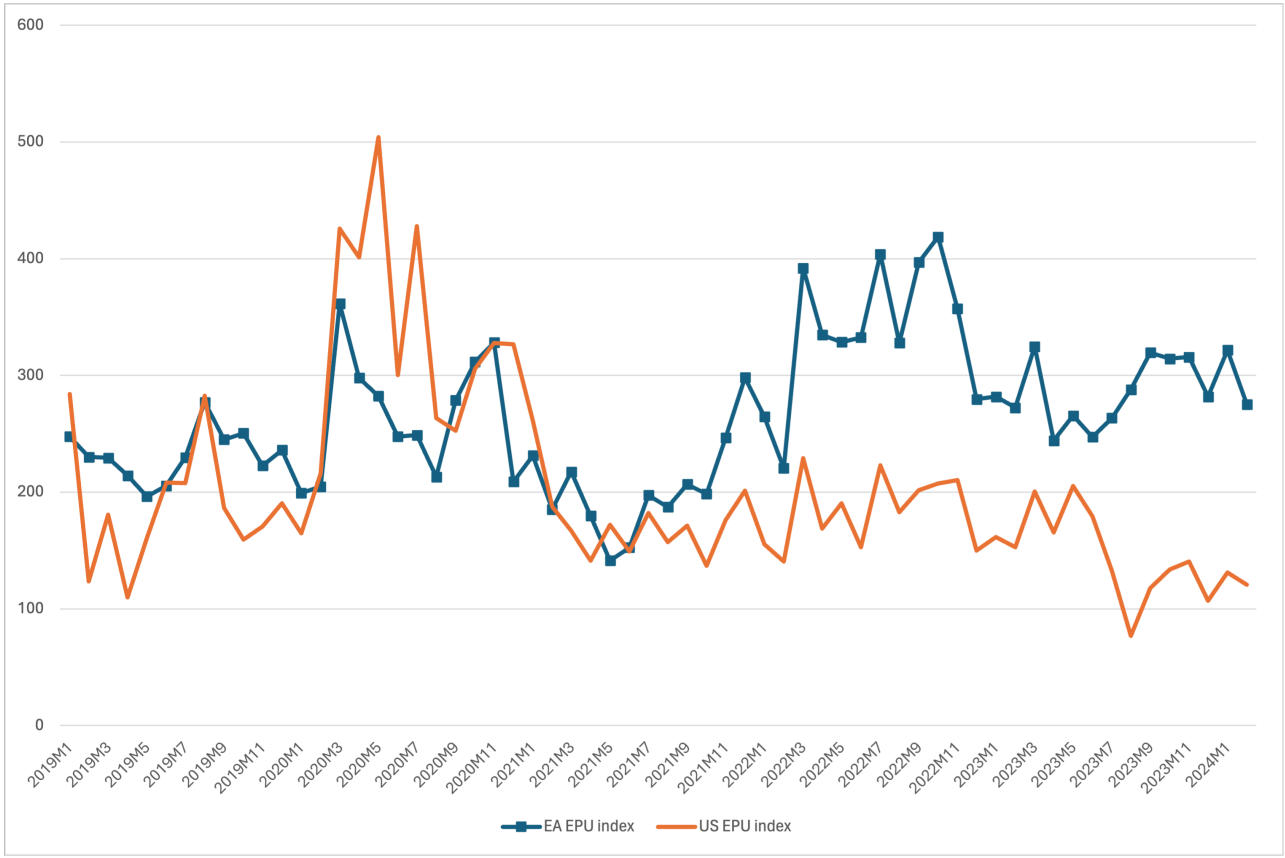
Ahlander, Klein, Pappa (2024)

Firms charge higher prices when inflation is high: Estimates of price elasticity of supply for Swedish firms much steeper when including surge in inflation period.



The ECB´s additional constraint: geopolitical risk

A crucial difference: Uncertainty in EA vs. US

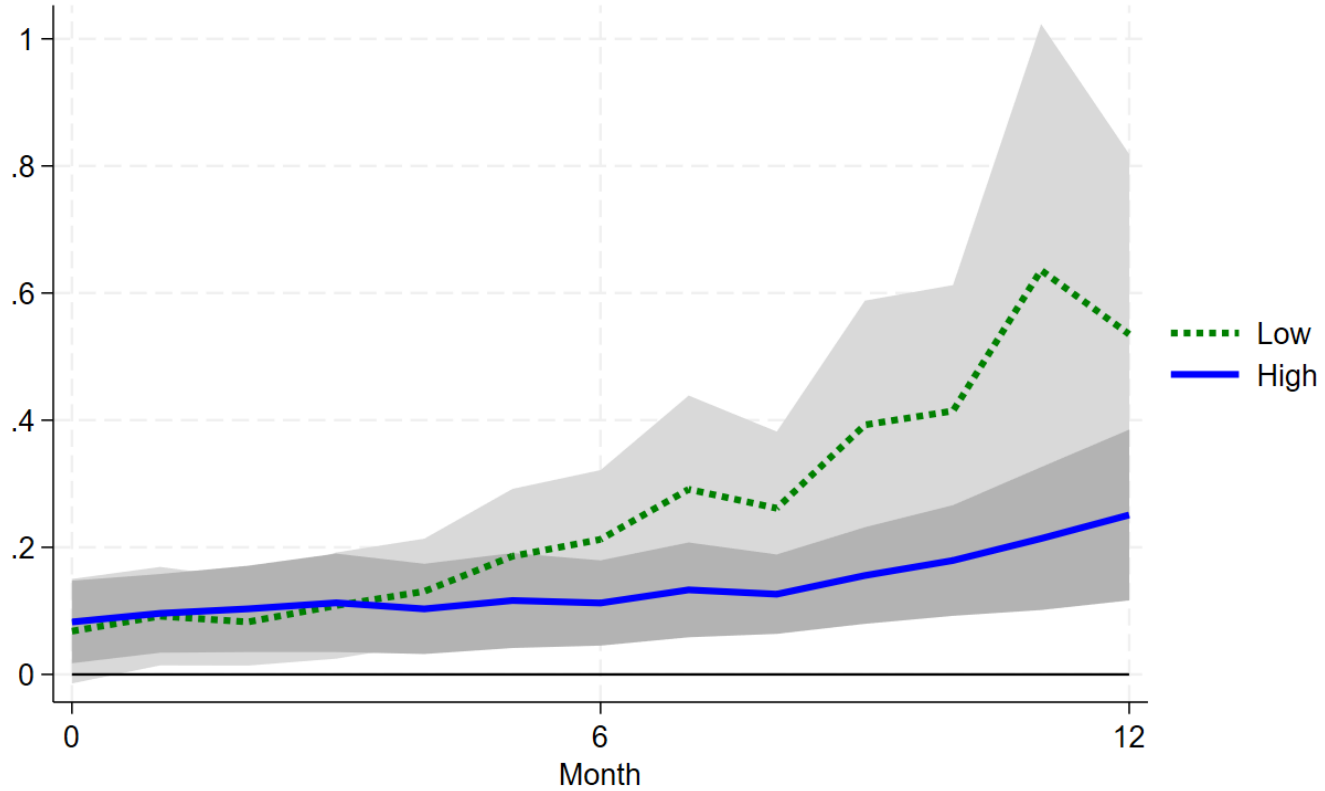


Source: Economic Policy Uncertainty Index

- Weak impact of monetary policy shocks on real activity during uncertain times.
- Precautionary motives might not let economy lift off.
- Firms reluctant to change their prices in uncertain times.

Ahlander, Klein, Pappa (2024)

Firms reluctant to change their prices in times of high uncertainty.



Why worry about inflation volatility?

- Evidence supports pass through of shocks is faster when inflation volatility is high, because firms change prices more frequently.
- Signs of steepening of Phillips curve encouraging for policy.
- A steep Phillips curve means inflation can be brought down quickly with relatively little pain in terms of higher unemployment.
- Recent data are consistent with this story, but not the "last mile."
- Steepening can be asymmetric:
  - Karadi and Reiff (2019) Price decreases sticky especially in presence of trend inflation.
  - Higher uncertainty in EA could stand in the way of disinflation.

How should monetary policy respond?

- Arndt and Enders (2024), following Devereux (2006), model of firms that can invest in price flexibility. When inflation volatility is high, firms find it optimal to invest in price flexibility.

- Cavallo et al. (2023) probability that firm resets its price depends on benefits of adjustment. A large cost shock shrinks firms´ profit margins, inciting them to adjust prices.

- In both models, a stricter monetary policy stabilizes inflation not only directly, but also indirectly by reducing price flexibility.

- The ECB should wait for the actual numbers (not projections) to show inflation has landed close to 2 per cent before cutting rates.

- In such a volatile environment, undershooting inflation seems preferable.

Thank you!

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Shock identification: Sign restrictions

Structural shocks	Supply	Demand	Bottle	Oil	MP
ΔGDP	-	-	-	-	-
ΔHCPI	+	-	+	+	-
$\Delta \mathbf{P}_{oil}$	0	.	0	+	.
I_{bottle}	0	.	+	.	.
R	.	-	.	.	+

Suppose policy was optimal

New Keynesian Phillips curve is given by:

$$\pi_t = \beta E_t \pi_{t+1} + \kappa x_t + u_t$$

where $u_t = \rho u_{t-1} + \epsilon_t$

Policy maker minimizes the following quadratic loss function:

$$L_t = {\pi_t}^2 + \lambda {x_t}^2$$

Optimal targeting rule:

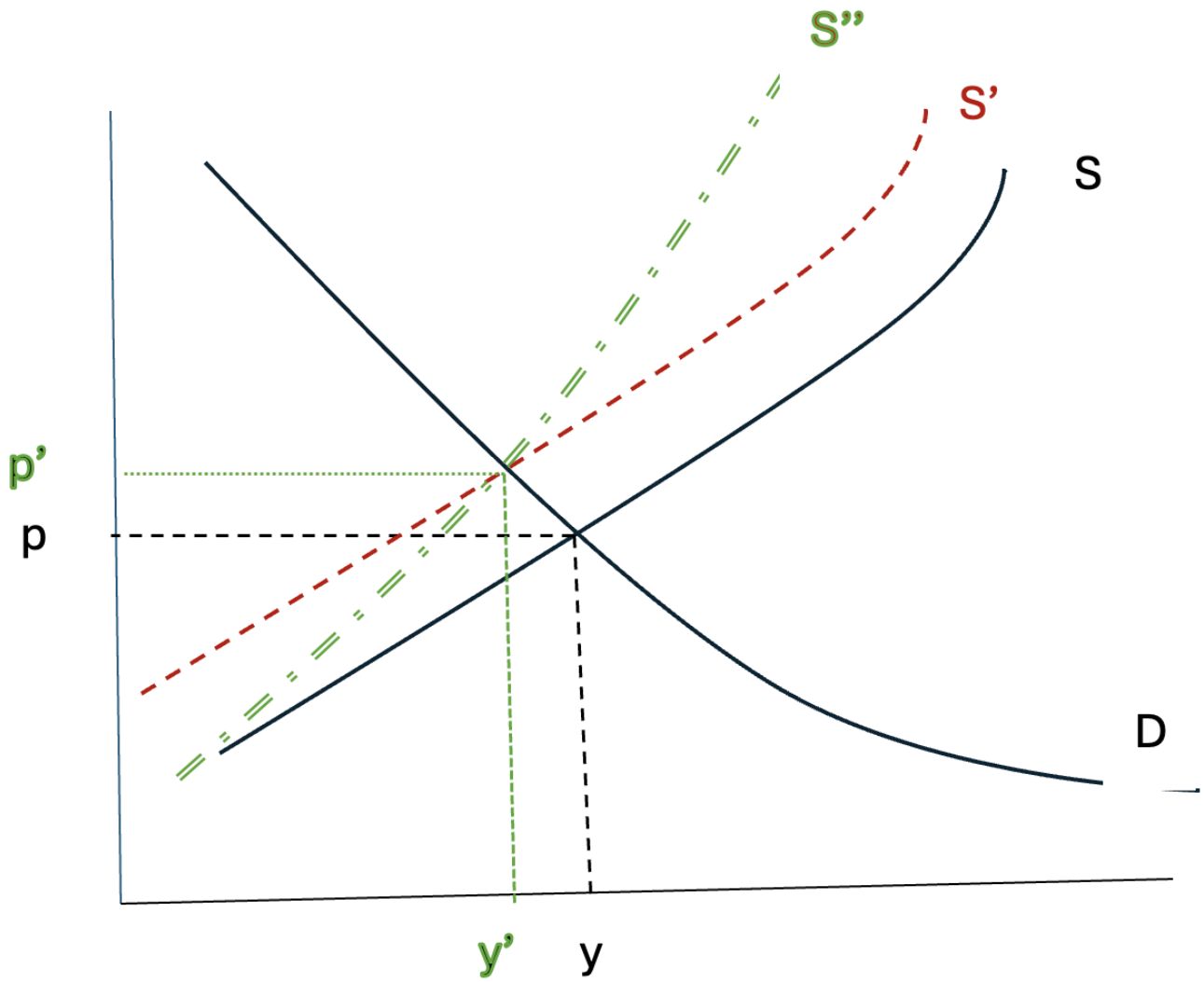
$$\pi_t = -\frac{\lambda}{\kappa} x_t$$

Inflation dynamics determined by:

$$\pi_t = -\frac{\lambda}{[\kappa^2 + \lambda(1 - \beta\rho)]} u_t$$

Supply movements

Shock shifted supply curve but also changed its slope



Monetary policy

Demand shifts by monetary policy can lift inflation again, with no gains in terms of output