MONETARY POLICY, RELATIVE PRICES AND INFLATION CONTROL

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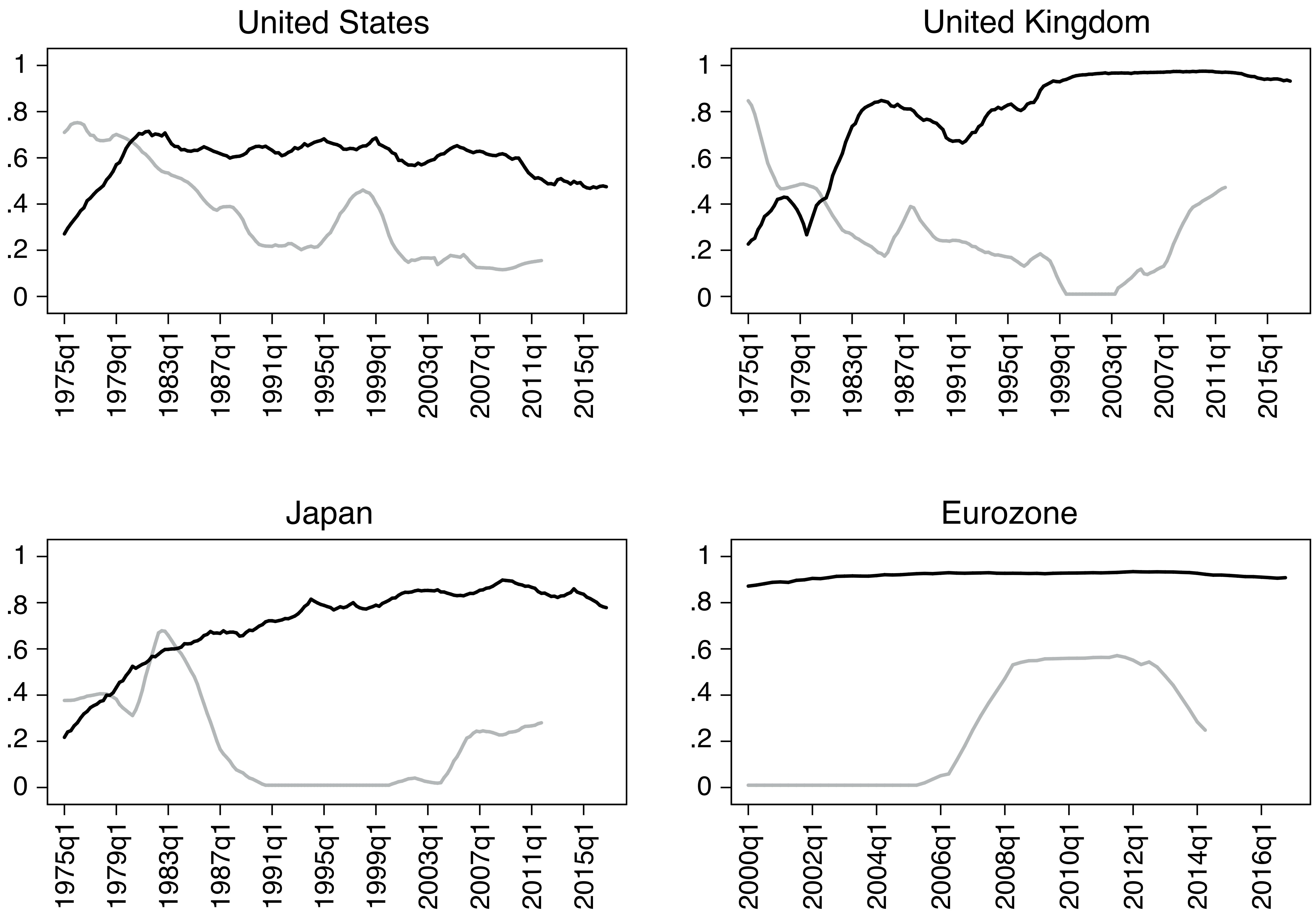
24th of March 2022
Banco Central de Reserva del Perú
Centenary conference with BIS

Fall in the permanent component of inflation

Figure 2.4 Persistence of trend inflation



Notes: The grey lines plot the coefficients of a simple autoregressive model (estimated with quarterly data and a 12-year window for the US, UK and Japan, and a six-year window for the Eurozone) and black lines plot the values of θ obtained with the Stock and Watson model.

Stock and Watson UC-SV model:

$$\pi_t = \tau_t + \eta_t$$

$$\tau_t = \tau_{t-1} + \varepsilon_t$$

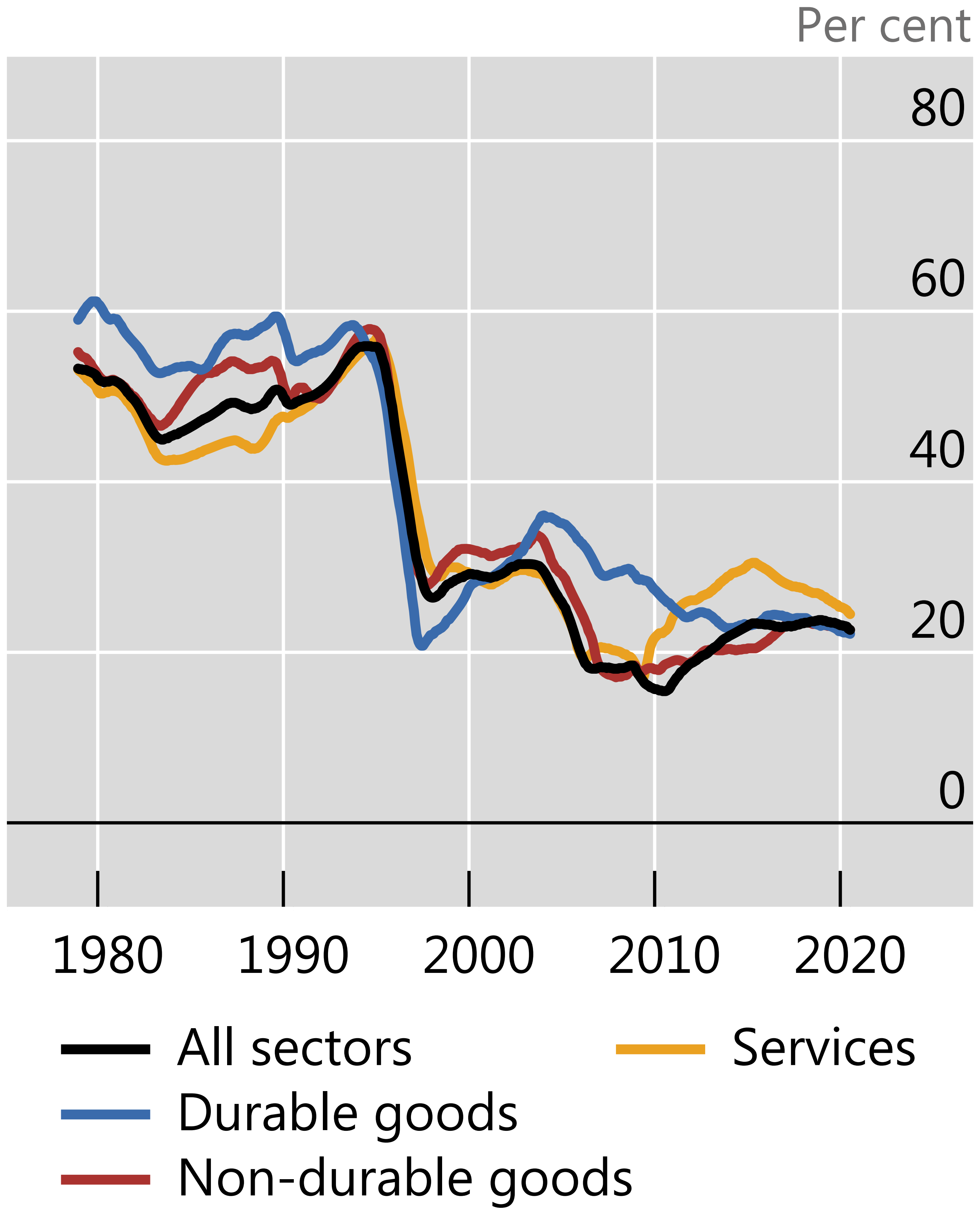
$$\theta = 1 - \frac{\sigma_\varepsilon}{\sigma_a}$$

Rise in black line, fall in weight of permanent shocks to inflation

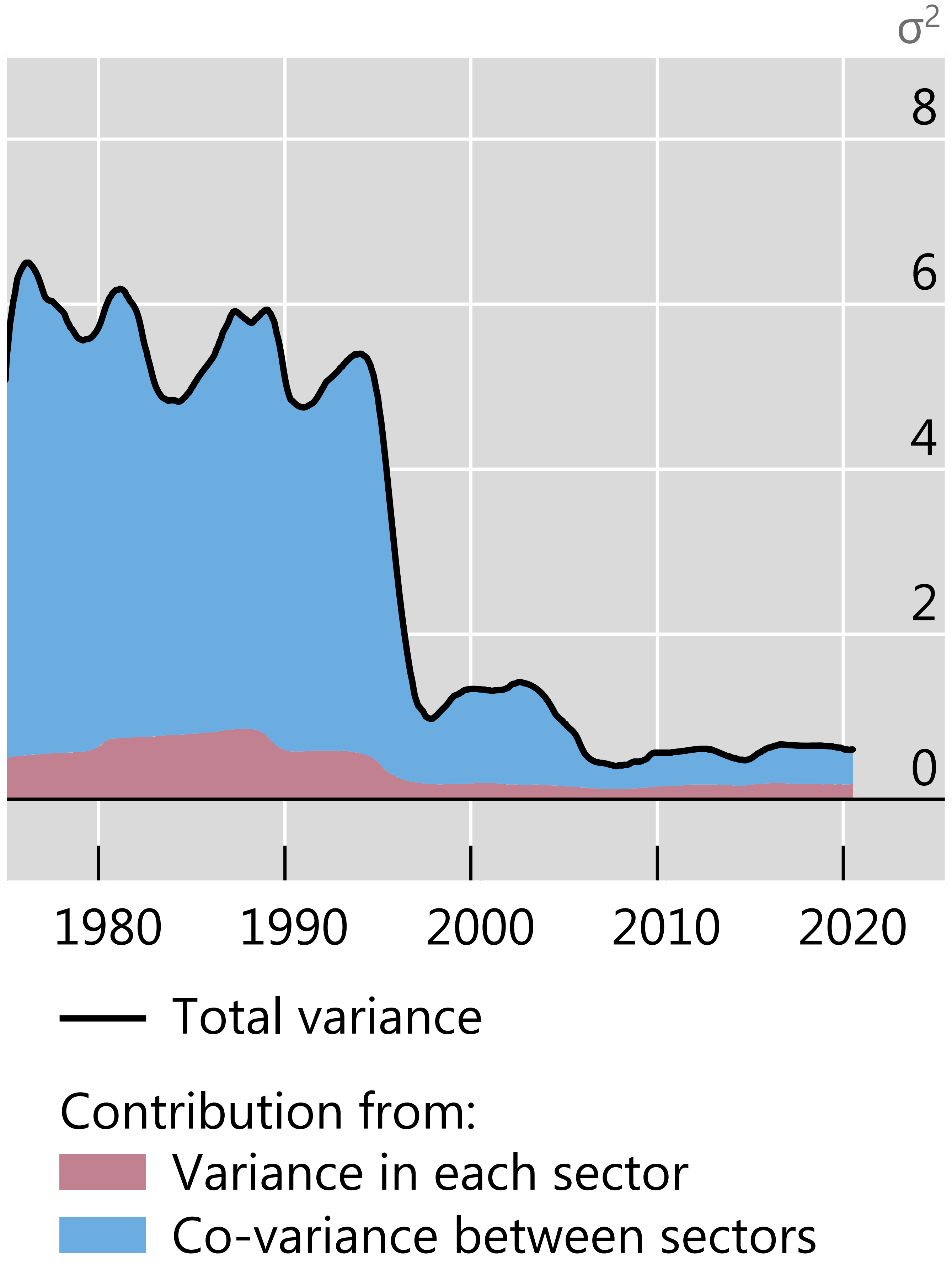
Source: Miles et al (2017)

Fall in the common component of inflation

Time-varying fraction of total price-change variance due to the common component[1]



Variance decomposition of 12-month headline PCE inflation[3]



Dynamic factor model representation

$$\boldsymbol{\pi}_t = \boldsymbol{\Lambda}\mathbf{F}_t + \mathbf{u}_t$$

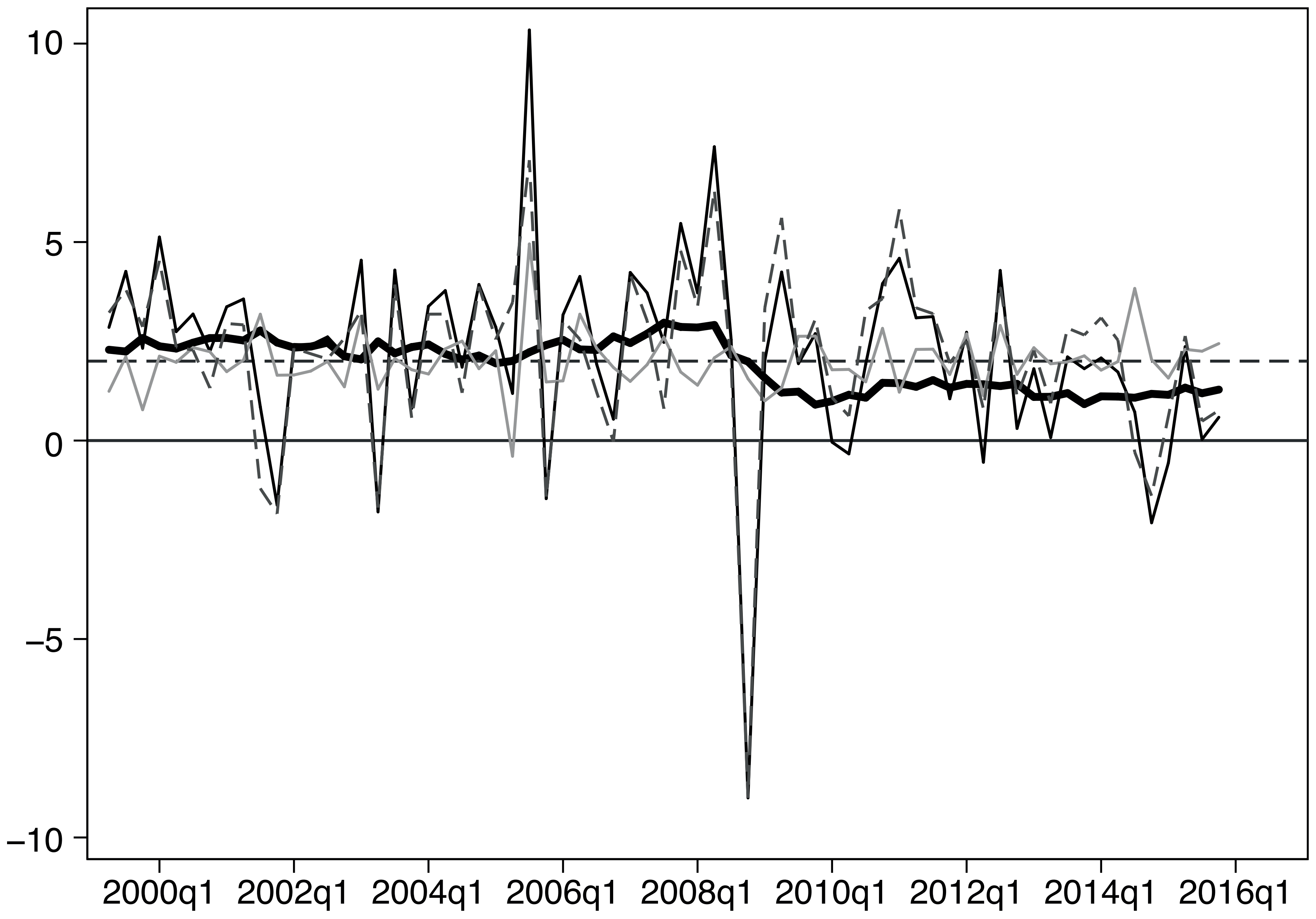
Is the common the persistent?

Source: Borio et al (2017)

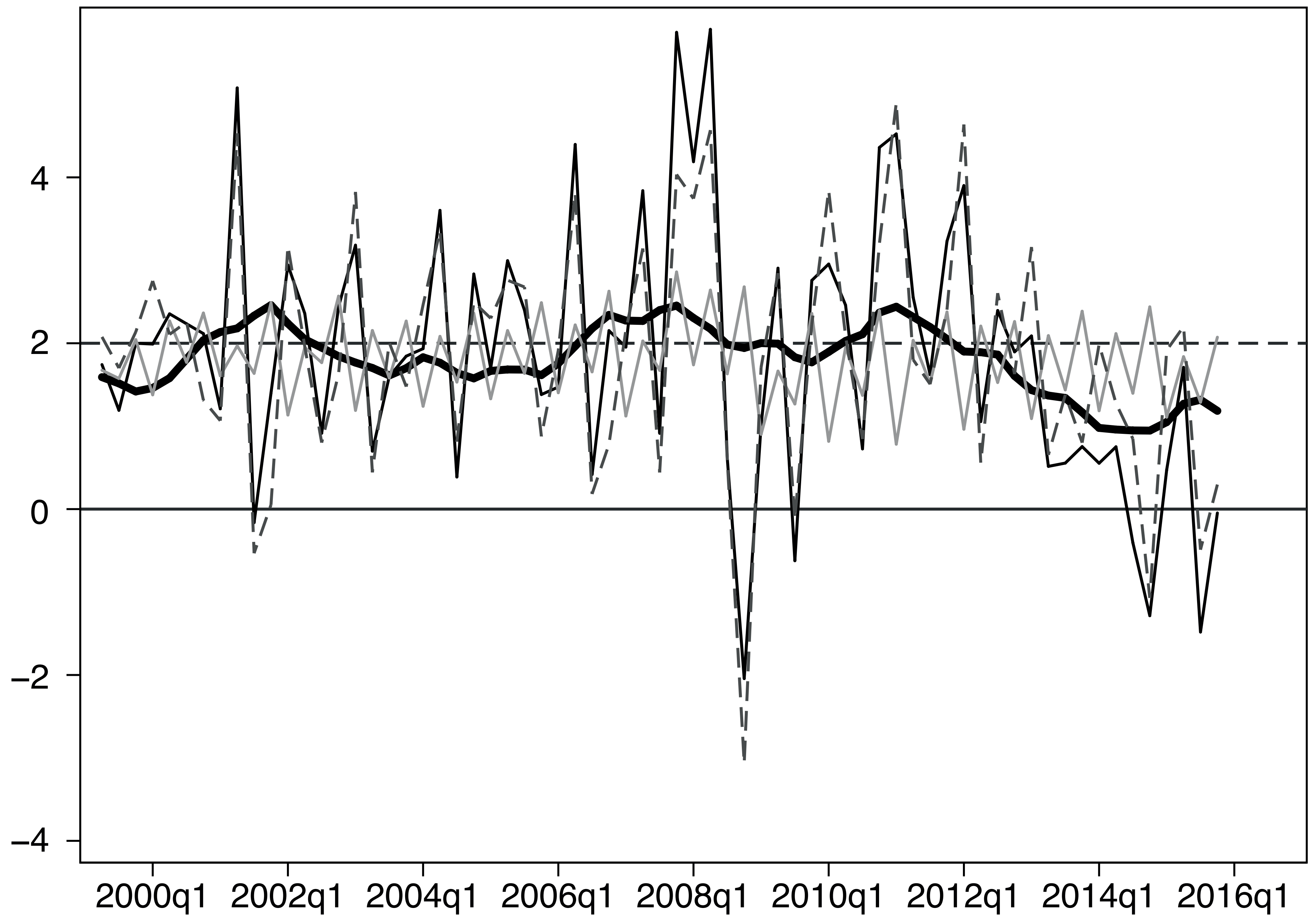
Fall in the aggregate relative component

Figure 2.2 Decomposition of inflation into pure inflation, relative price component and idiosyncratic shocks

A: United States



B: Eurozone



Notes: The solid thick black lines plot 'pure' inflation, the thin black line plots inflation, the solid grey lines plot the aggregate relative prices component of inflation and the grey dotted lines the idiosyncratic component differs across goods. For the US, we introduce a floor at -9 for all series.

$$\Lambda \mathbf{F}_t = \mathbf{l} a_t + \Gamma \mathbf{R}_t$$

The aggregate relative price component is the covariance term

Source: Miles et al (2017)

In a model: the transmission of M policy

$$\nu_t = \Delta\omega_t + \left(\frac{\kappa\eta}{\alpha}\right)\Delta\tau_t, \tag{23}$$

$$\begin{aligned}\boldsymbol{\Theta}_i\boldsymbol{\rho}_t = {} & \Delta\mu_{t-1} + \left(\frac{\alpha\phi_i}{1-(1-\alpha)\overline{\phi}}\right)\Delta^2\mu_t \\ & + (\varpi - \overline{\theta})\Delta\zeta_{t-1} - \phi_i\left(\frac{\alpha(\overline{\theta} - \varpi) + \overline{\phi}(1-\alpha)(1-\overline{\theta})(\alpha - \kappa)}{1-(1-\alpha)\overline{\phi}}\right)\Delta^2\zeta_t \\ & -\kappa(\theta_i - \overline{\theta})[\phi_i\Delta\zeta_t + (1-\phi_i)\Delta\zeta_{t-1}],\end{aligned} \tag{24}$$

$$u_{it} = -\kappa(\phi_i\chi_{it} + (1-\phi_i)\Delta\chi_{it-1}), \tag{25}$$

- Unexpected changes in monetary policy, which change relative prices, and therefore lead to changes in production across firms with nominal rigidities
- Also productivity changes though…

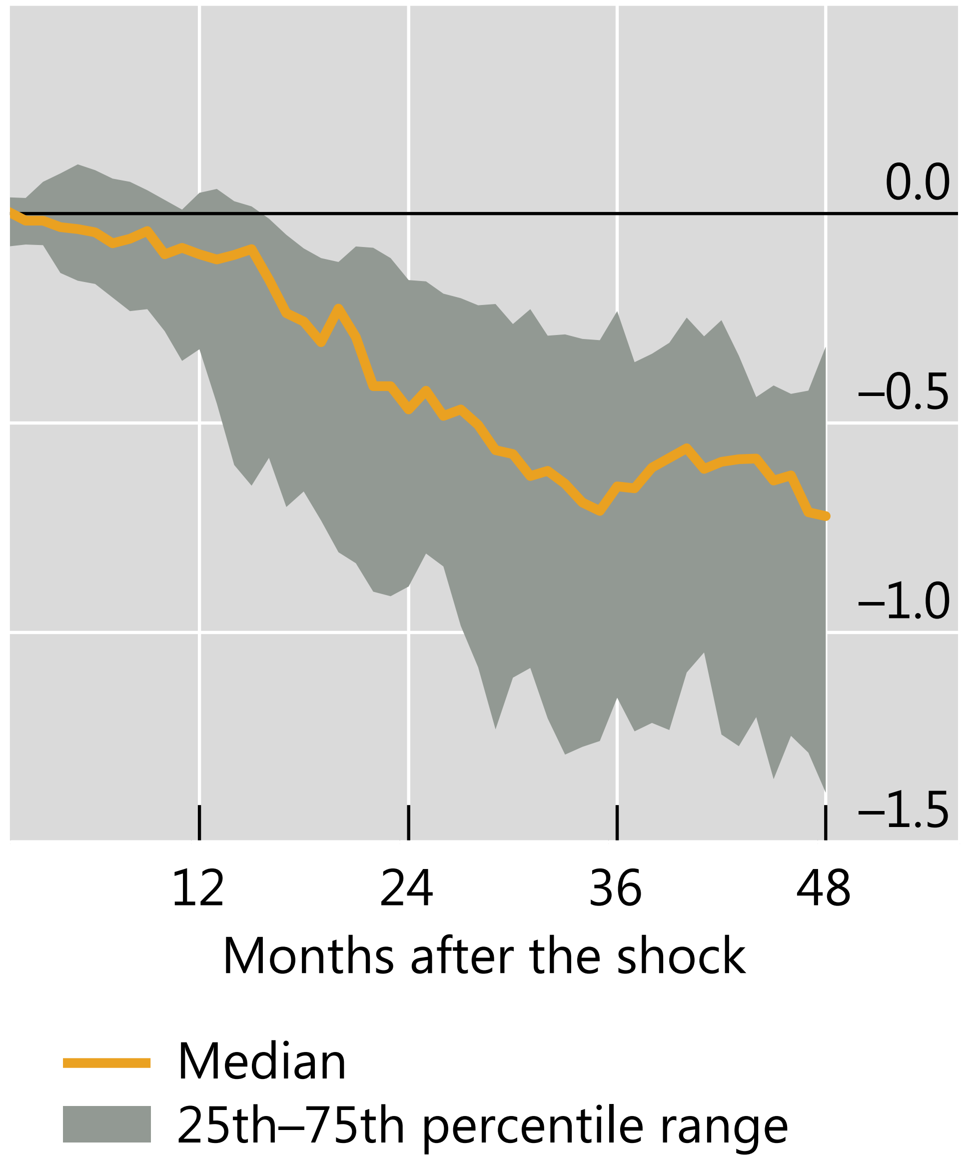
Source: Reis Watson (2010)

Monetary policy shocks and inflation

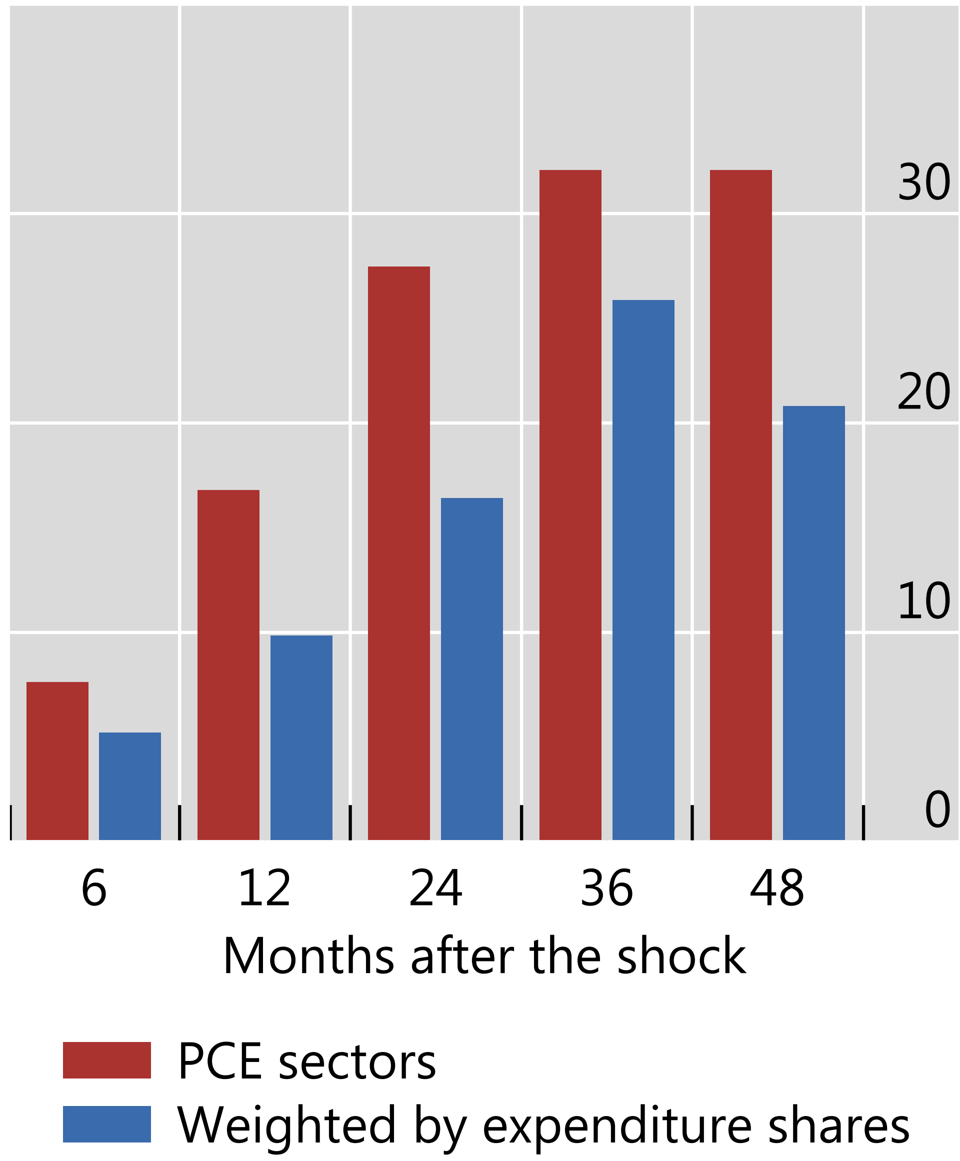
The impact of monetary policy on prices varies across sectors

In per cent Graph 3

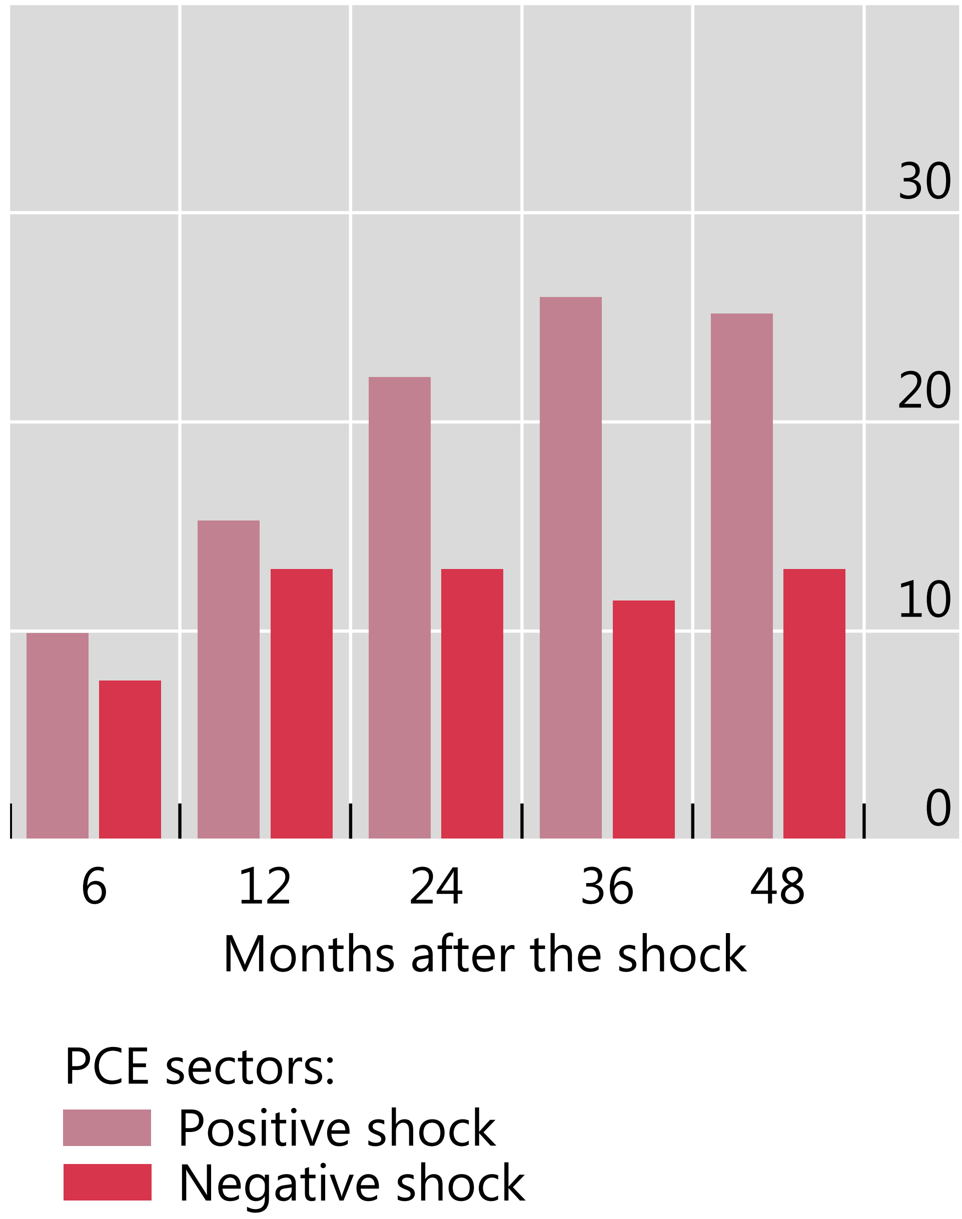
Response of prices to a monetary policy shock across narrowly defined PCE sectors[1]



Proportion of statistically significant price responses to monetary policy shocks[2]



Proportion of statistically significant price responses to positive and negative monetary policy shocks[2, 3]



[1] Weighted percentiles of the response of prices across 131 narrowly defined personal consumption expenditure (PCE) sectors to a monetary policy shock of 25 basis points. The weights are equal to the sector-specific average expenditure shares. [2] Significant at 10% level. [3] In this specification, positive (ie contractionary) and negative (ie expansionary) monetary policy shocks of 25 basis points are allowed to have differential effects on prices.

Sources: Board of Governors of the Federal Reserve System; US Bureau of Economic Analysis; authors' calculations.

Separating the monetary policy shocks, they indeed play a role

Work mostly through a few prices being more flexible

Consistent with great degree of rigidity, flat Phillips curve, capital of inattention earned in 2000-20

Source: Borio et al (2017)

What about the present and near future?

- <u>Conjecture</u>: increase in variance, increase in impact of policy?
  - 2020 bottlenecks and 2021 energy shocks: supply shocks are back
  - They are the aggregate relative price components that had been subdued
  - Volatility of last 12 months has eroded the capital of inattention
- The challenges for central banks have <u>changed radically</u> in last 12 months
  - relative prices
  - drifting expectations anchor
  - trade-offs between inflation and output
  - pivots in policy, regain credibility following a narrow path
- Authors speak of flexibility. Reality calls for it to be (aggressively) used