



BANCA D'ITALIA
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The future long-run level of interest rates

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Equilibrium Real Interest Rates – concepts, current and future
drivers: New insights and policy implications

SUERF - OeNB workshop

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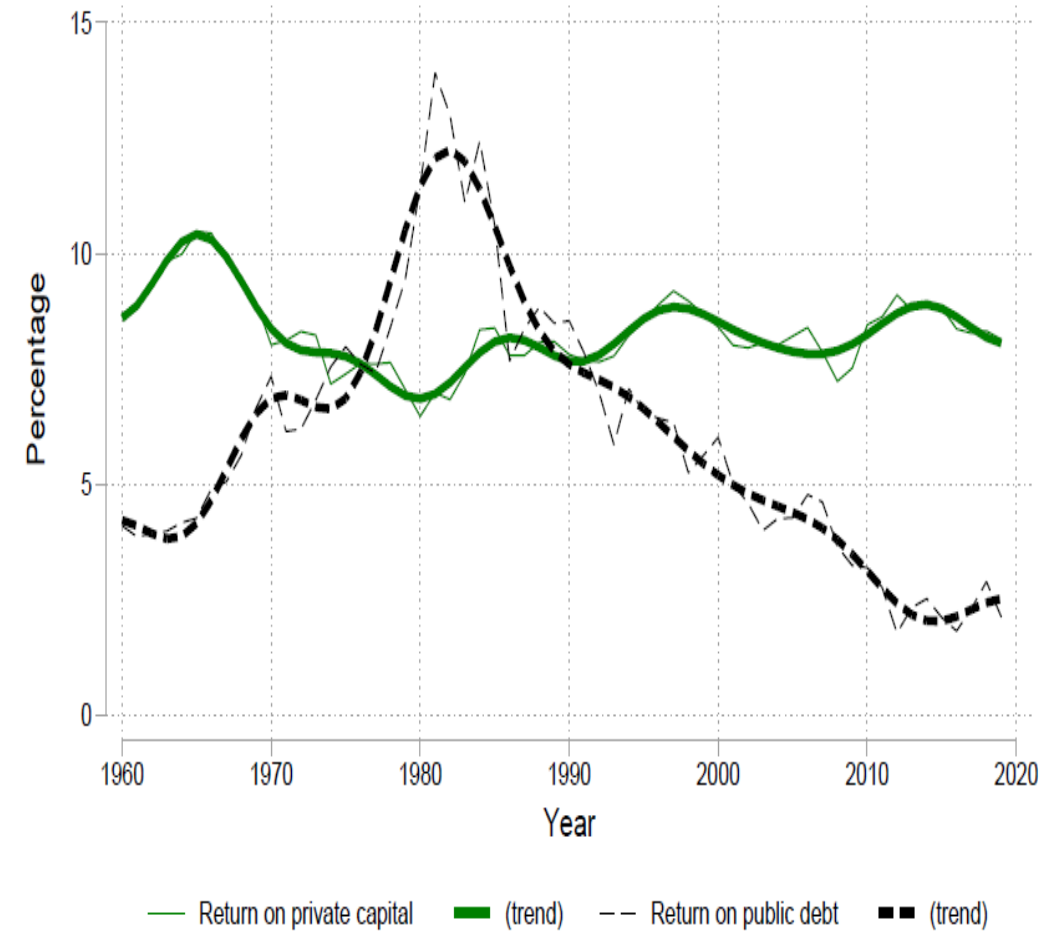
Outline

1. Return on bonds and return on capital
2. The past, the present and the future of r^*
3. Monetary policy, r^* and inflation

Return on bonds and return on capital

- Steady decline of gov't bond-based estimates of r^* since early 80s; return on capital roughly constant
- Messages robust to ten concerns
- Public bond r^* relevant for monetary policy **stance**; private investment r^* for its **transmission**
- Was neglecting return on private capital a cause of 2021-22 inflation surge?
- **Ricardo's call**: worry about high inflation and focus on aggregate supply reforms

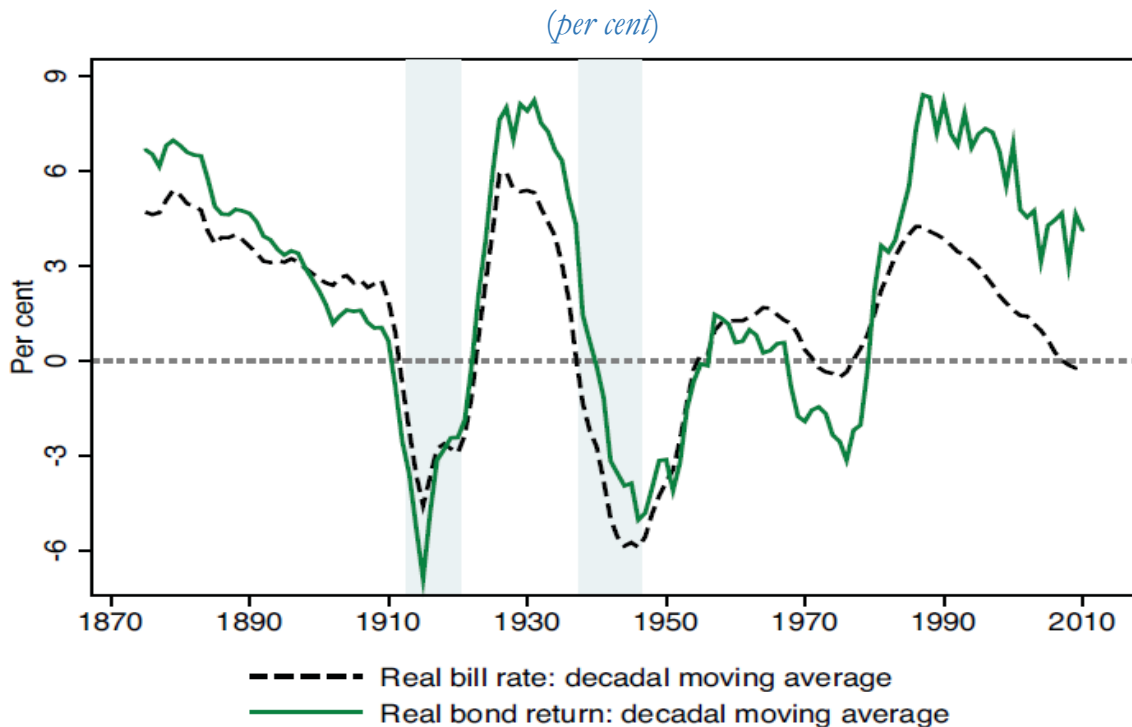
U.S. returns on private capital versus government bonds
(year-on-year percentage changes)



Source: Reis, R. "Which r -star, public bonds or private investment? Measurement and policy implications", LSE, mimeo

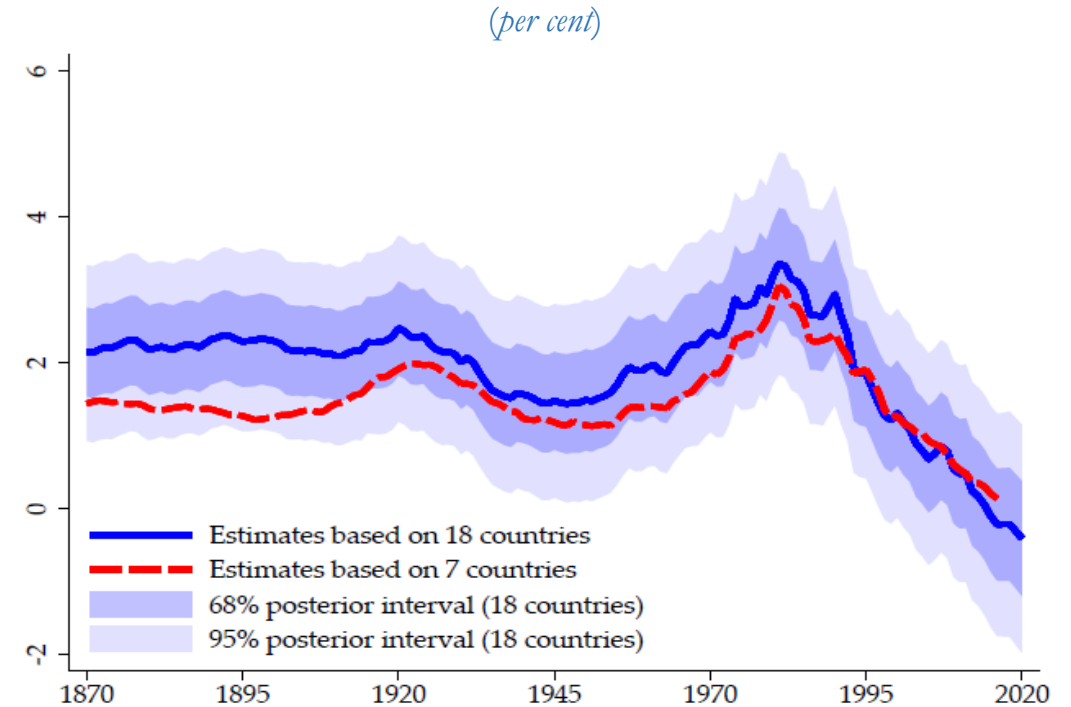
What are **past** and future trends in level of various “equilibrium rates”?

Trends in real returns on bonds and bills



Source: Jordà et al. (2019). Note: Mean returns for 16 countries, weighted by real GDP. Decadal moving averages.

Trends in global natural rate

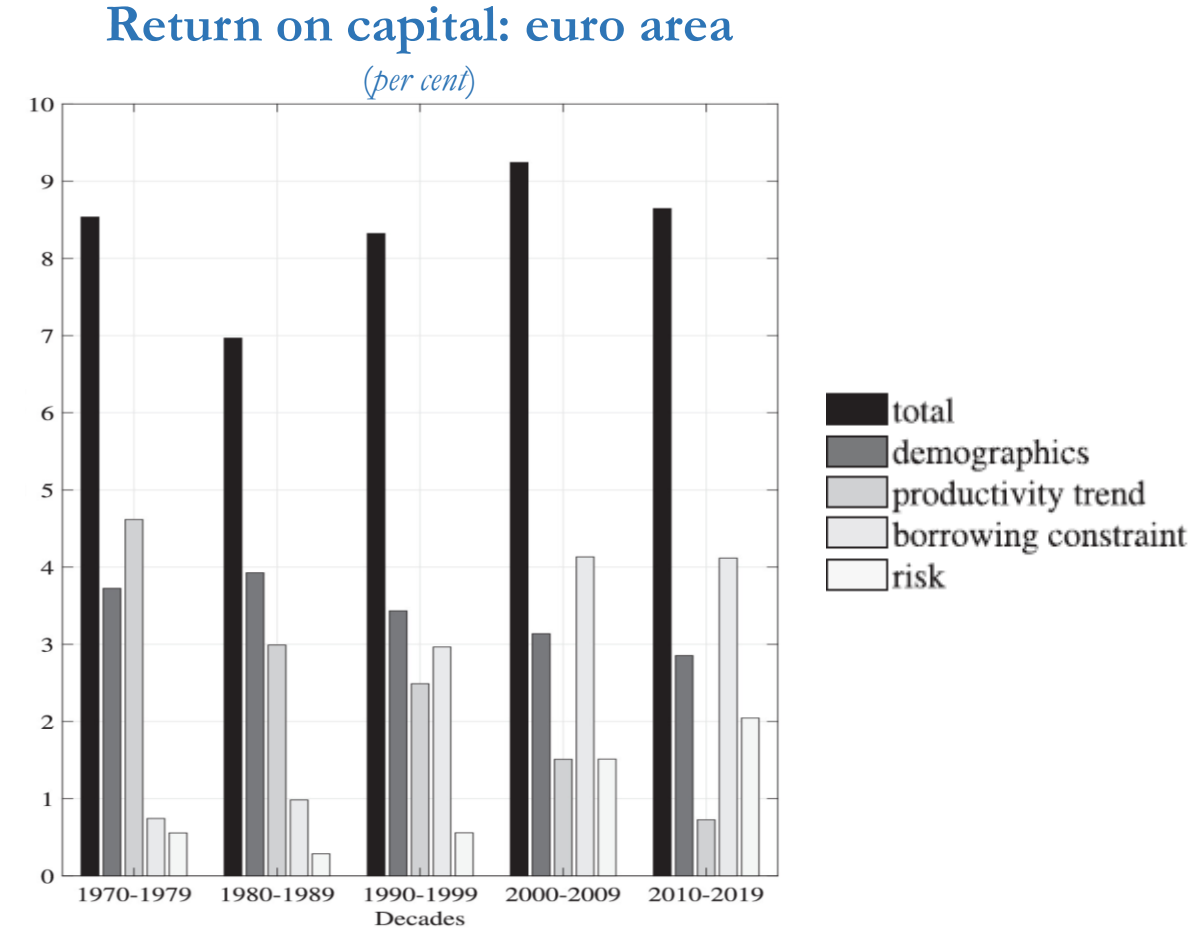
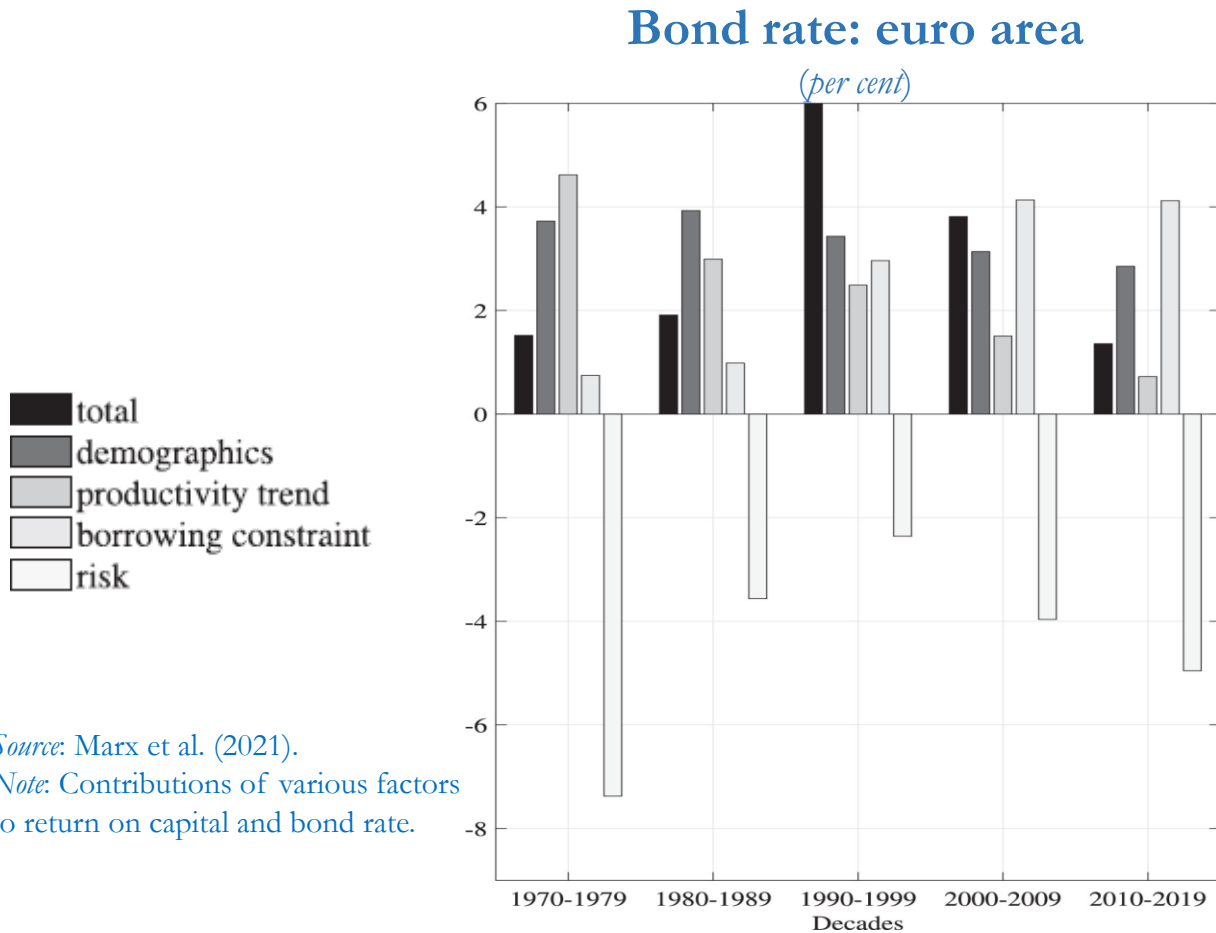


Source: Grimm et al. (2023). Note: posterior medians with corresponding posterior coverage intervals for our model with 18 countries (data until 2020) and the original DGGT model with 7 countries (data until 2016).

LH chart: from a long-run perspective, past decline and current low level of real safe rate is not unusual. Puzzle: why safe rate was so high in mid-1980s?

RH chart: global natural has reached its lowest level since 1870

What are **past** and future trends in level of various “equilibrium rates”?



LH chart: productivity and demography pulled down interest rates

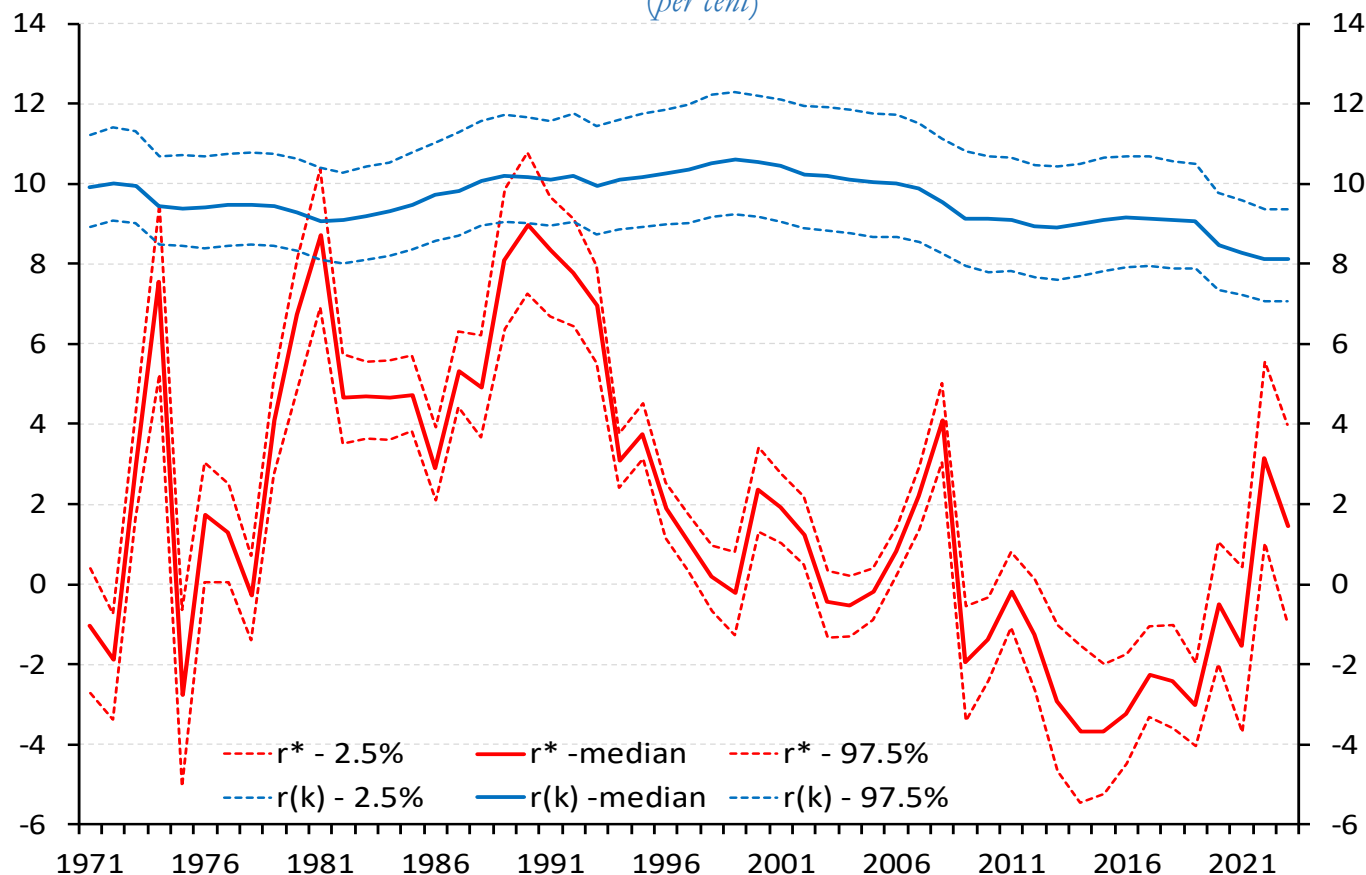
RH chart: same factors exerted downward pressure on return on capital

Contribution of risk larger for bond rate than for return on capital

What are **past** and future trends in level of various “equilibrium rates”?

Short-term natural rate and return on capital: euro area

(per cent)



Source: update of Gerali and Neri (2019).
Note: Percentiles of posterior distribution of smoothed variables.

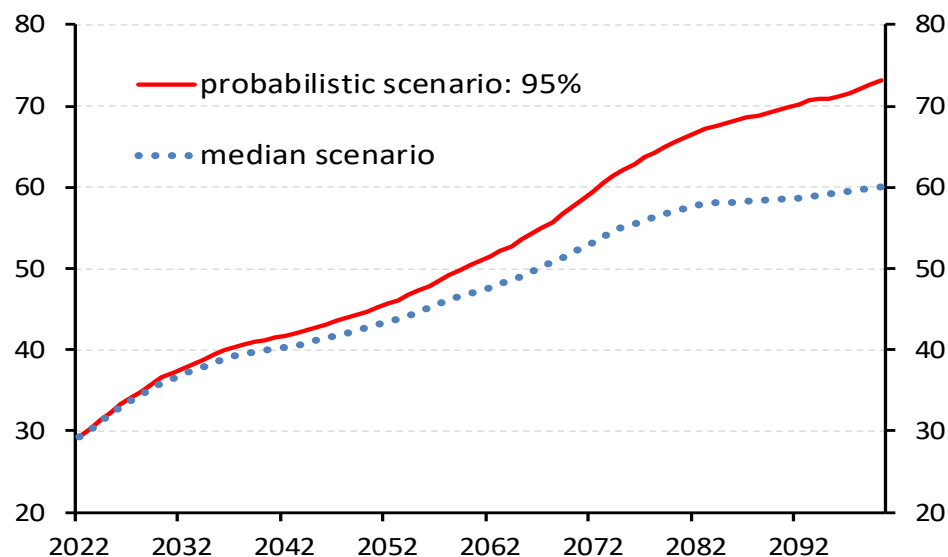
Small-scale NK model with both permanent and transitory shocks, real rigidities, capital and sticky prices

Natural rate has declined since early 90s driven by risk premium and labor-augmenting technology shocks; return on capital has decline by almost 2.5 p.p. since early 2000s

What are past and **future** trends in level of various “equilibrium rates”?

Drivers of future trend in r^*

- Public debt: \uparrow (Rachel and Summers, 2019)
- TFP growth: \downarrow (Cesa-Bianchi et al., 2023, Papetti, 2021a), but upside risks \uparrow
- Demographics: \downarrow (Aksoy, 2019, Papetti, 2021a, Cesa-Bianchi et al., 2023, Jones, 2022)
- Natural disaster: $\uparrow \downarrow$ (Cantelmo, 2022)

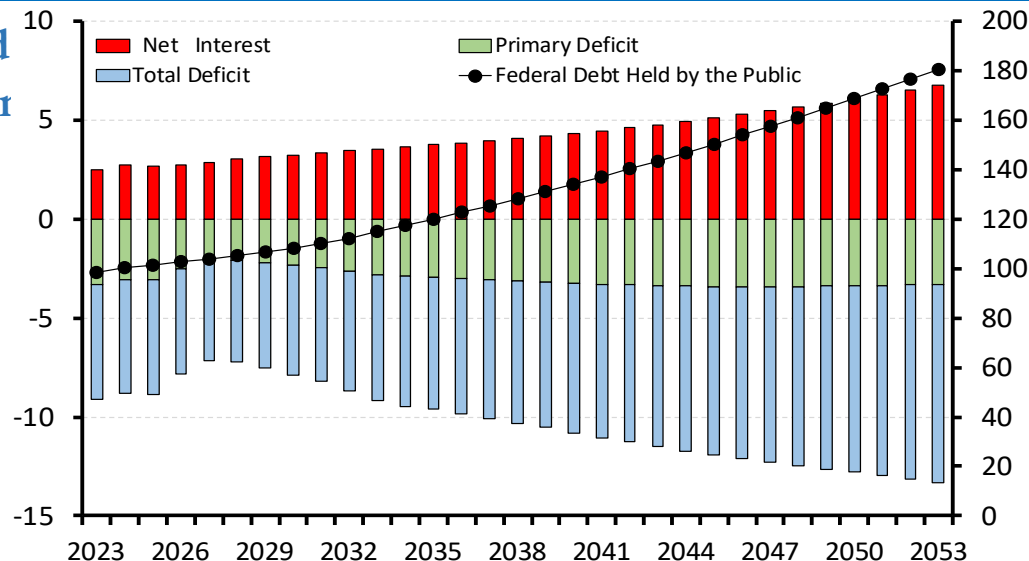


Source: Population Division, United Nations.

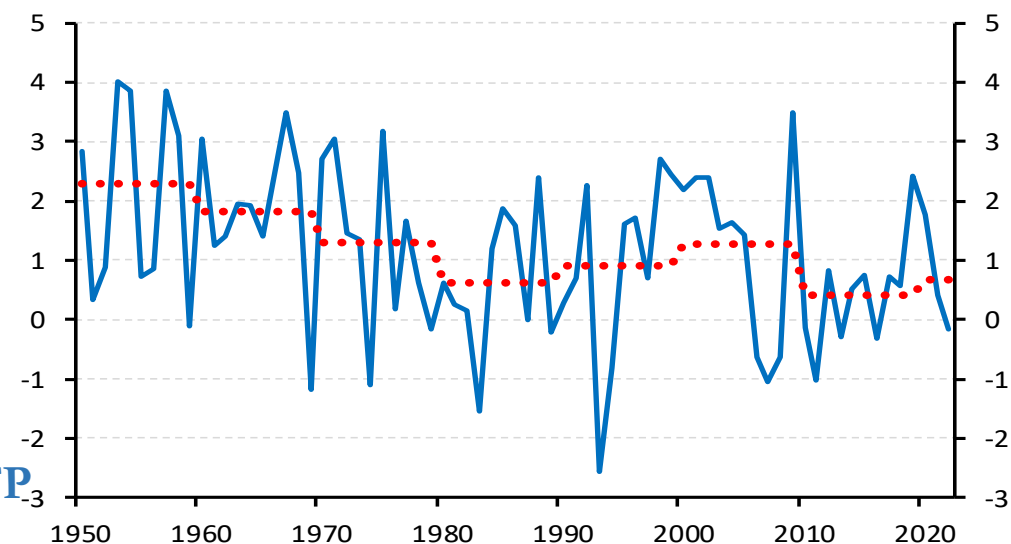
Old-dependency ratio
(per cent)

Utilization-adjusted TFP
(y-on-y percentage change)

CBO's Extended
Baseline Projection
(per cent of nominal GDP)



Source: Congressional Budget Office.



Source: update of Fernald (2014) 7/10

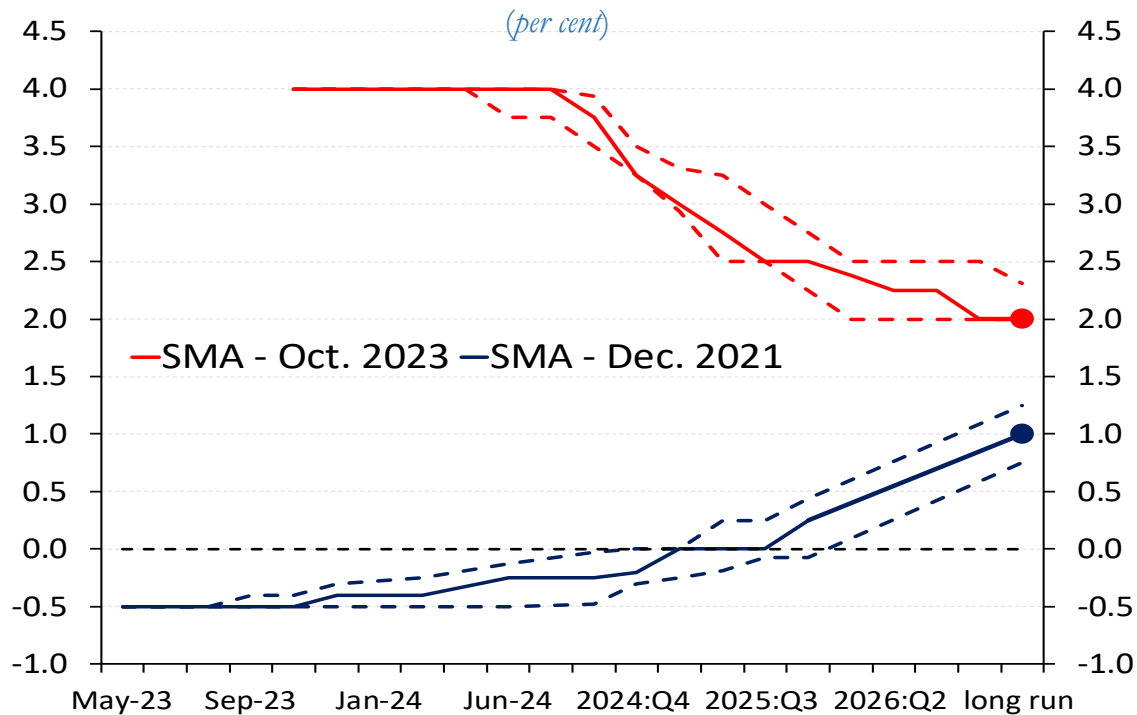
Monetary policy, r^* and inflation

- “*Natural rate is an abstraction (as output gap and natural rate of unemployment); like faith, it is seen by its work*” (Williams, 2023)
- “[...] *main underlying factors that have pushed real interest rates down since the 1980s and 1990s [...] do not appear poised to reverse and drive a durable rise in global real interest rates over the coming years*” (Obstfeld, 2023)
- Was 2021-22 inflation surge in euro area due to real rates standing persistently below natural counterparts or to unfavorable shocks?
- Supply-side shocks where key drivers of inflation in euro area (Neri et al., 2023, Guerrieri et al, 2023)

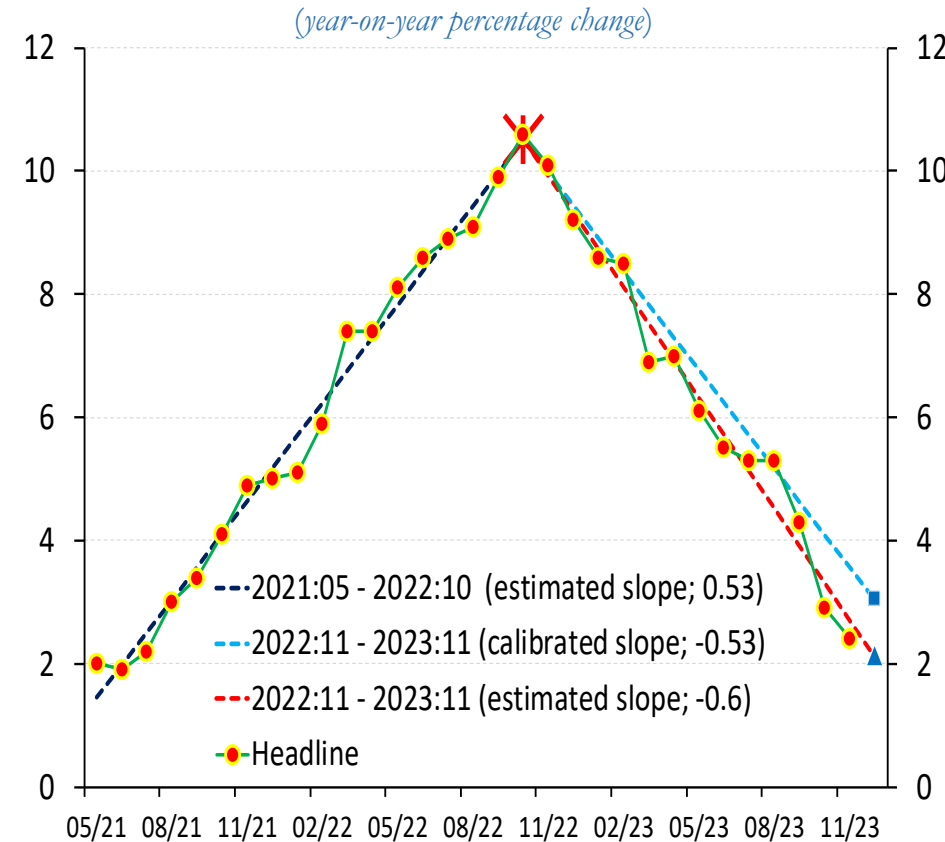
Monetary policy, r^* and inflation (cont'd)

- ECB's monetary policy restrictive
- Transmission through banking sector is stronger than in previous episodes; more tightening in pipeline

Expected rate on ECB's deposit facility rate



Euro-area headline inflation



Source: author's calculation based on ECB data.

- Disinflation has started and underlying inflation falling rapidly; pace may surprise

Thank you for your attention!

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