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EUROSYSTEM

Are Phillips curves in CESEE still alive and well behaved?

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Based on original research by Florian Huber and Josef Schreiner

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Central, Eastern and Southeastern European Section
www.oenb.at



Motivation

Visible disconnect between labor market and price developments in CESEE for at least the past decade...

...but the Phillips curve has also received **a lot of attention in the economic literature in recent years** (see e.g. Stock and Watson, 2019, and Del Negro, et al., 2020)

⇒ **Is the Phillips curve in CESEE still alive and well behaved?**

Contributions to the literature:

- Analysis of PC in the CESEE region
- Flexible modelling / nonlinearities

[Huber, F. and J. Schreiner. 2023. Are Phillips curves in CESEE still alive and well-behaved? In: Focus on European Economic Integration Q3/23. OeNB. 7-29.](#)

In search for the Phillips curve in CESEE over the past two decades

Development of HICP inflation and unemployment rates

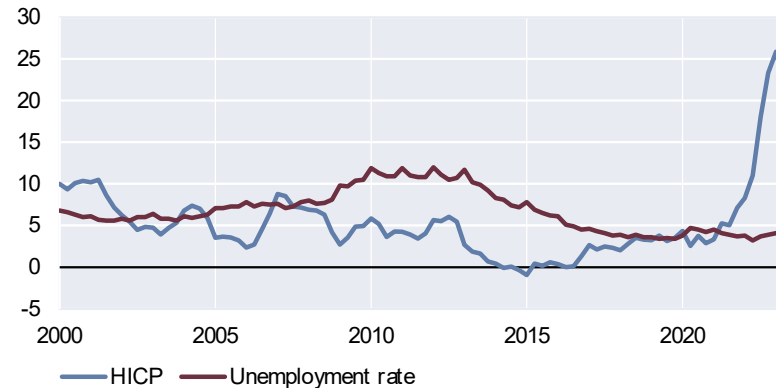
Czechia

Year-on-year change in %



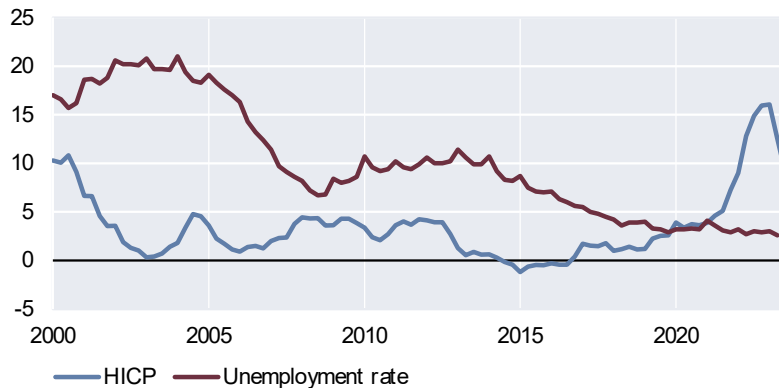
Hungary

Year-on-year change in %



Poland

Year-on-year change in %



Romania

Year-on-year change in %



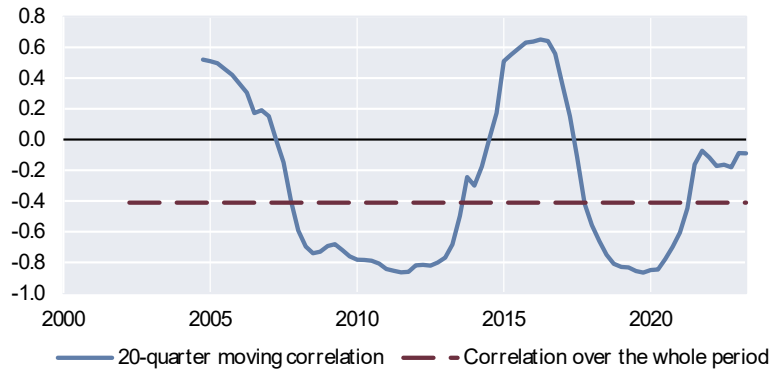
Source: Eurostat.

At times, co-movements were even in stark contrast to the theory

Correlations between HICP inflation and unemployment rates

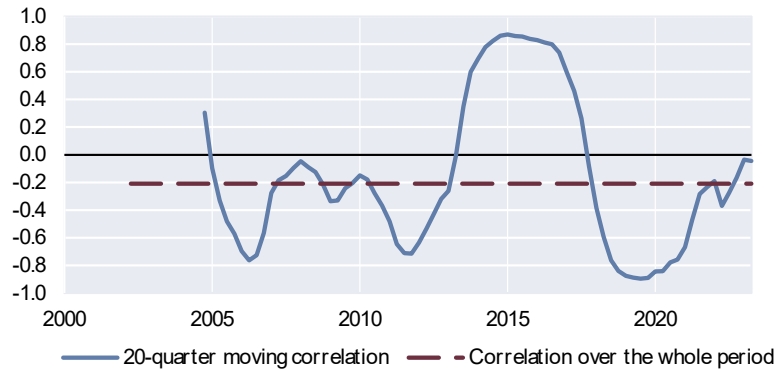
Czechia

Coefficient of correlation



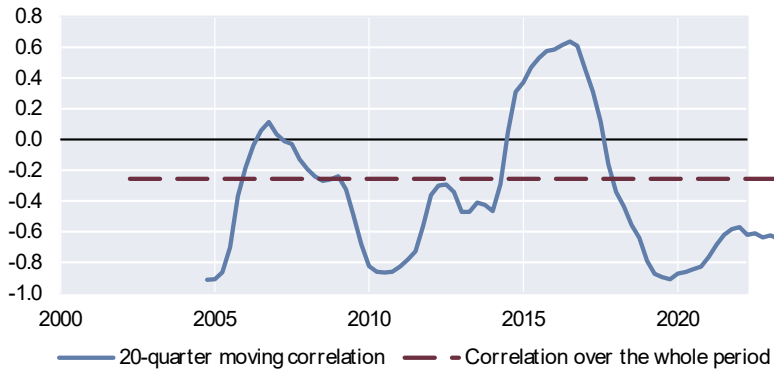
Hungary

Coefficient of correlation



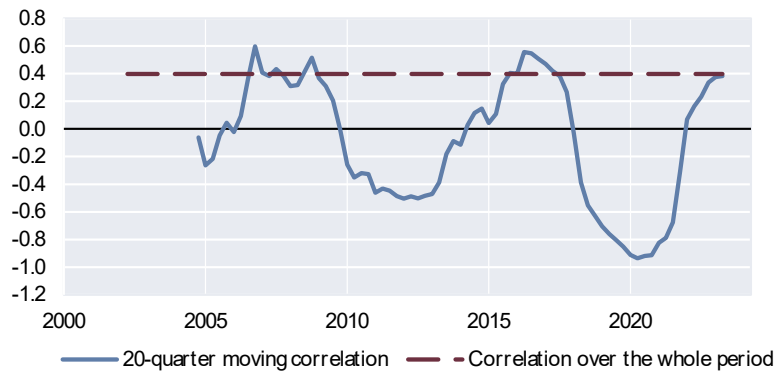
Poland

Coefficient of correlation



Romania

Coefficient of correlation



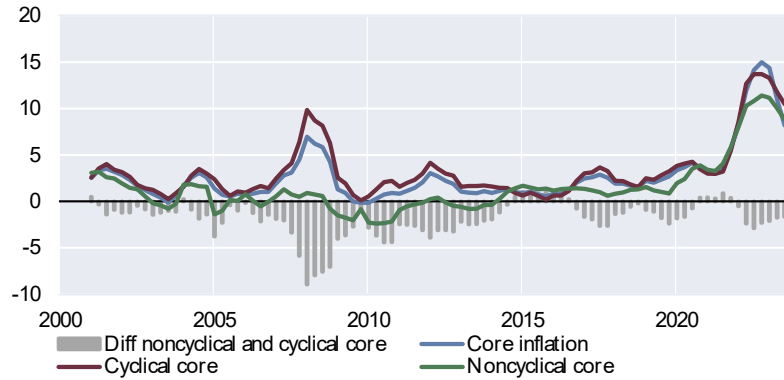
Source: Authors' calculations.

Cyclical effects dominate over structural dis-inflation trend

Development of core inflation and its cyclical and noncyclical components

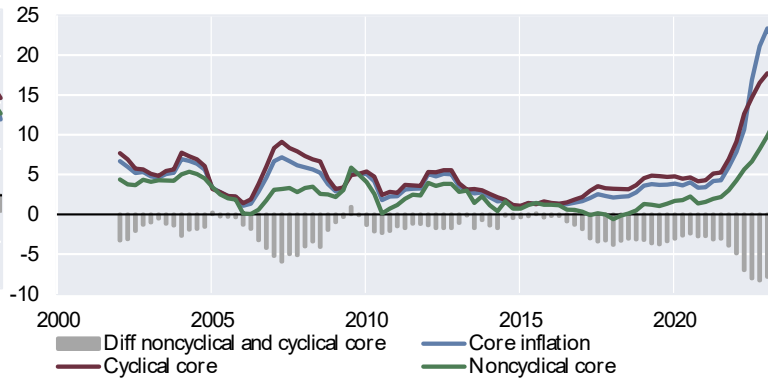
Czechia

Year-on-year change in %



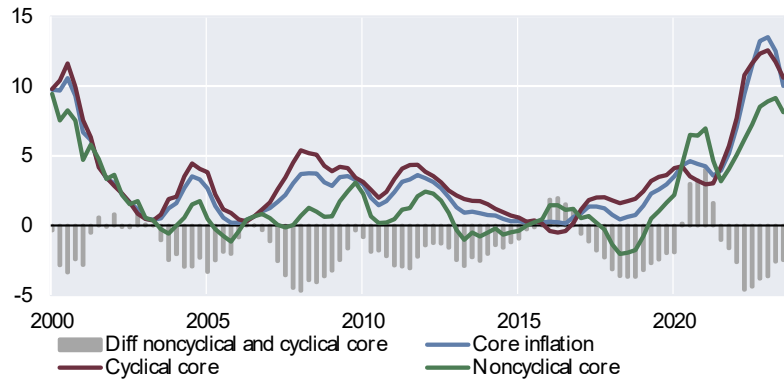
Hungary

Year-on-year change in %



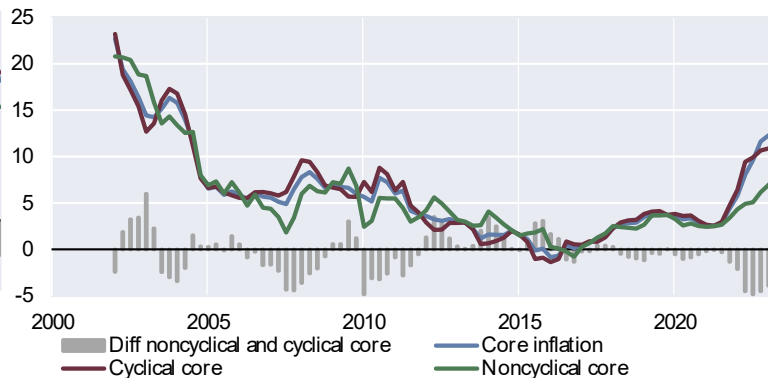
Poland

Year-on-year change in %



Romania

Year-on-year change in %



Source: Eurostat, authors' calculations.

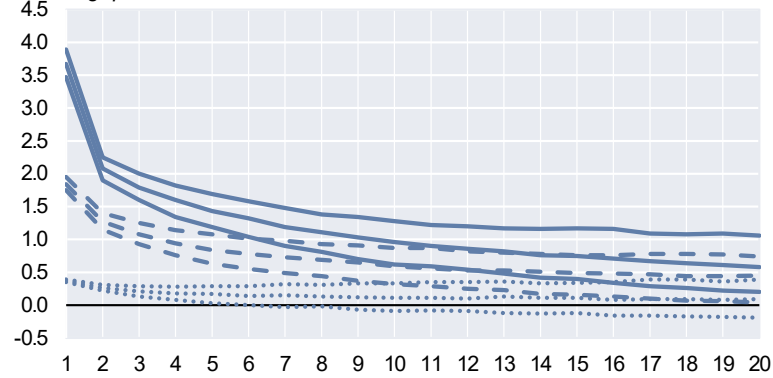
Empirical results

Simulating shocks to the unemployment rate

Impulse response functions of the unemployment rate to different positive shocks

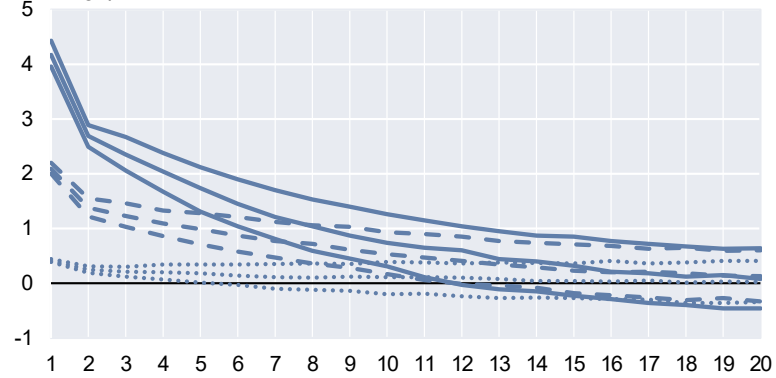
Czechia

Percentage points



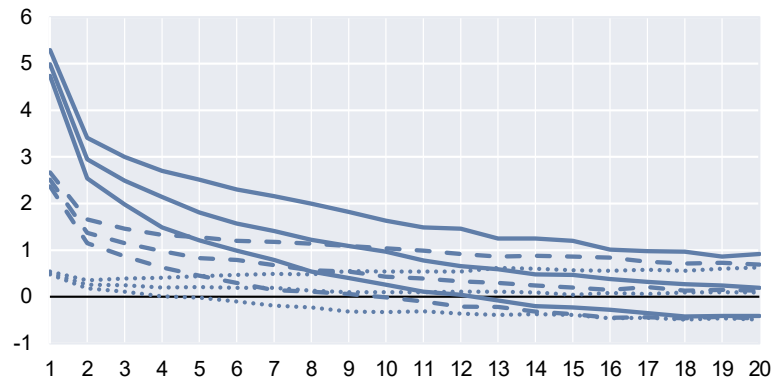
Hungary

Percentage points



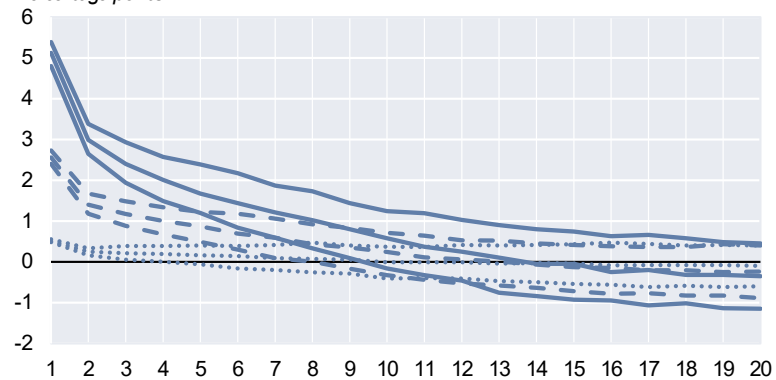
Poland

Percentage points



Romania

Percentage points



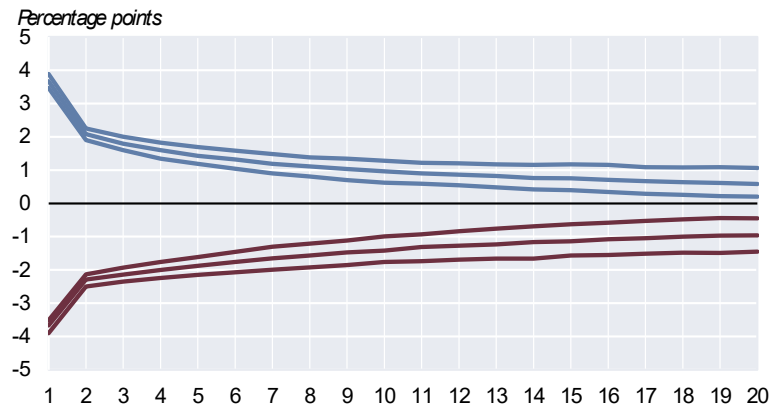
Source: Authors' calculations

Note: Median and 16th and 84th credible intervals of the posterior distribution of the dynamic responses to a strong (solid line), medium (dashed line) and weak (dotted line) unemployment shock.

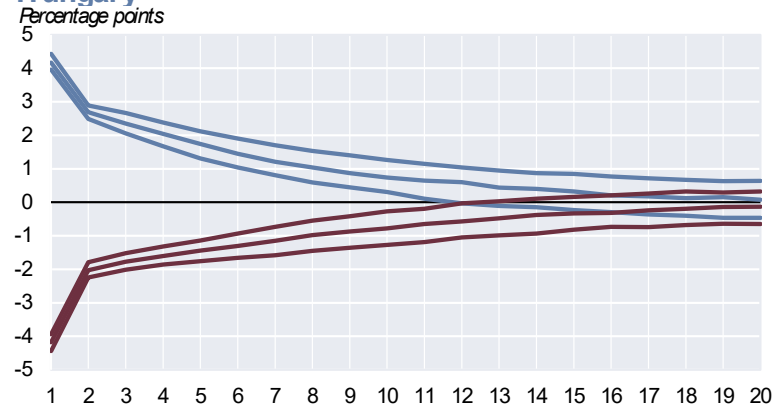
Asymmetric shocks in Czechia and Poland

Impulse response functions of the unemployment rate to a strong positive and strong negative shock

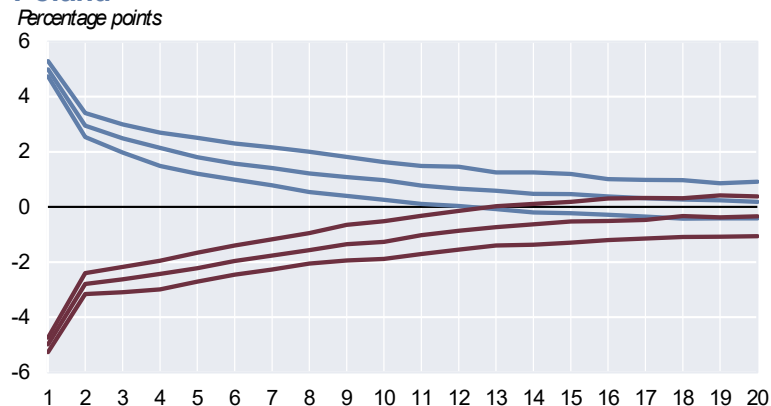
Czechia



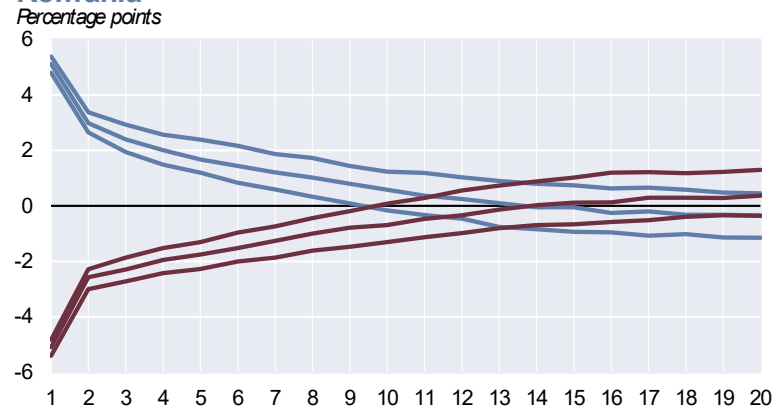
Hungary



Poland



Romania



Source: Authors' calculations

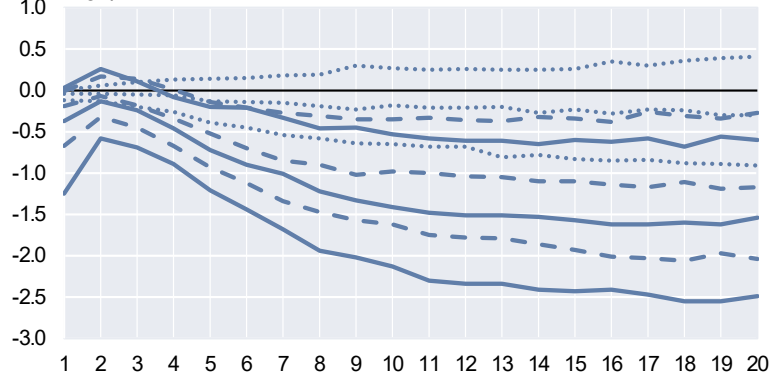
Note: Median and 16th and 84th credible intervals of the posterior distribution of the dynamic responses to a strong positive (blue line) and strong negative (purple line) unemployment shock.

How do unemployment shocks of different sizes affect HICP-inflation?

Impulse response functions of the HICP to different positive shocks

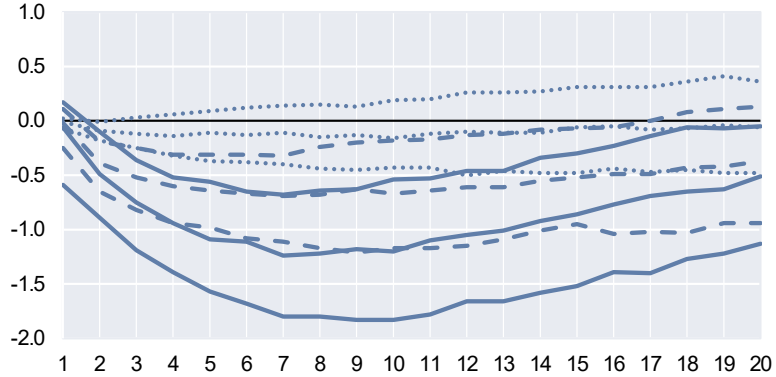
Czechia

Percentage points



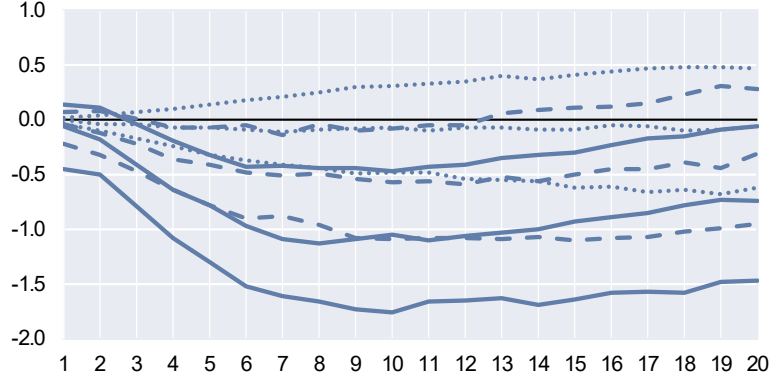
Hungary

Percentage points



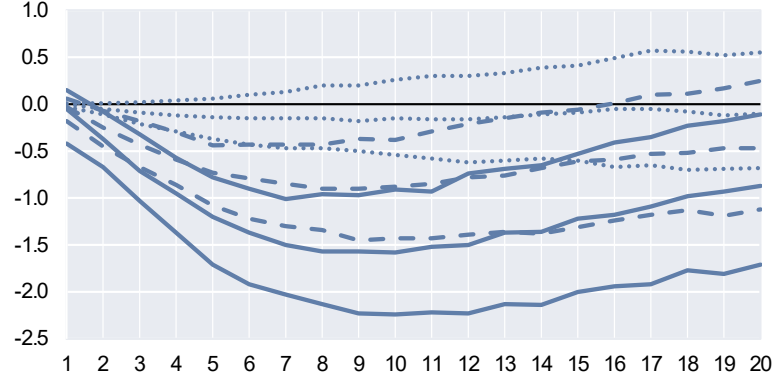
Poland

Percentage points



Romania

Percentage points



Source: Authors' calculations

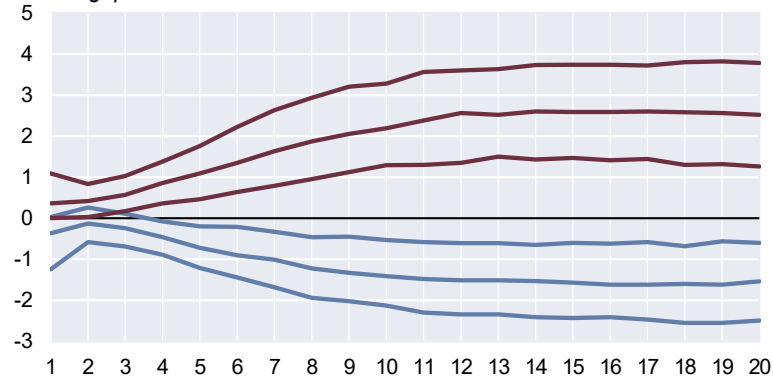
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How do unemployment shocks of different signs affect HICP-inflation?

Impulse response functions of the HICP to a strong positive and a strong negative shock

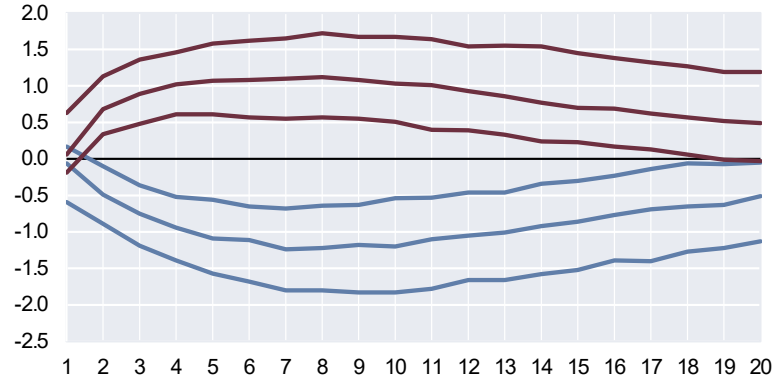
Czechia

Percentage points



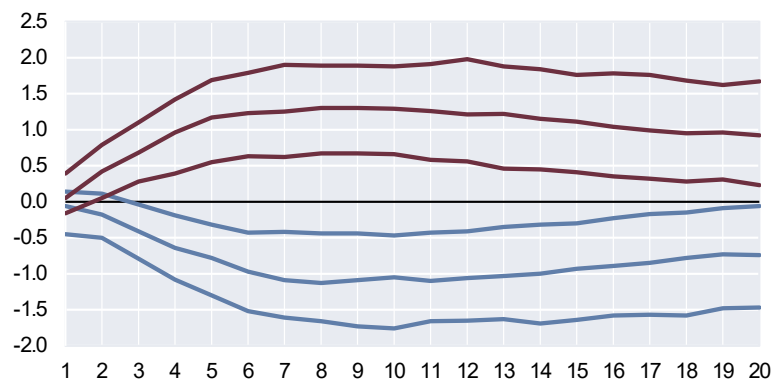
Hungary

Percentage points



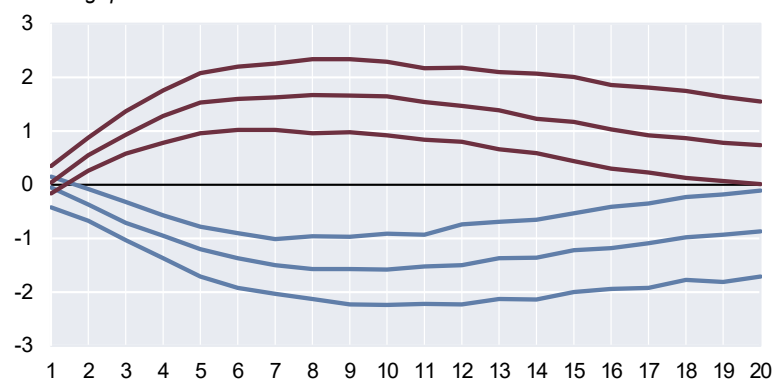
Poland

Percentage points



Romania

Percentage points



Source: Authors' calculations

Note: Median and 16th and 84th credible intervals of the posterior distribution of the dynamic responses to a strong positive (blue line) and strong negative (purple line) unemployment shock.

Summary of all results

Impact of a large unemployment shock on...

	<i>in percentage points</i>
...HICP inflation	1.1 - 1.6
...core inflation	0.8 - 1.3
...cyclical core inflation	0.9 - 1.4
...noncyclical core inflation	0.5 - 1.2

Difference in the impact of a large negative and positive shock on...

	<i>in percentage points</i>	
	Poland	Czechia
...HICP inflation	0.4	1.1
...core inflation	0.2	0.8
...cyclical core inflation	0.3	0.8
...noncyclical core inflation	0.3	0.7

Conclusions

Phillips curve exhibits substantial nonlinearities

- Only strong unemployment shocks induce a significant, broad and lasting effect on inflation
- Inflation often reacts more strongly to negative than to positive unemployment shocks

Inertia in the Phillips curve relationship

- It takes around two and a half years until a shock reaches its full impact

Policy implications

- Under current macroeconomic circumstances both of the above **call for a strong and decisive macroeconomic demand management to keep inflation in check.**
- The functioning of the Phillips curve might also be impaired by the **CESEE region's chronically tight labor markets.**

Danke für Ihre Aufmerksamkeit

Thank you for your attention

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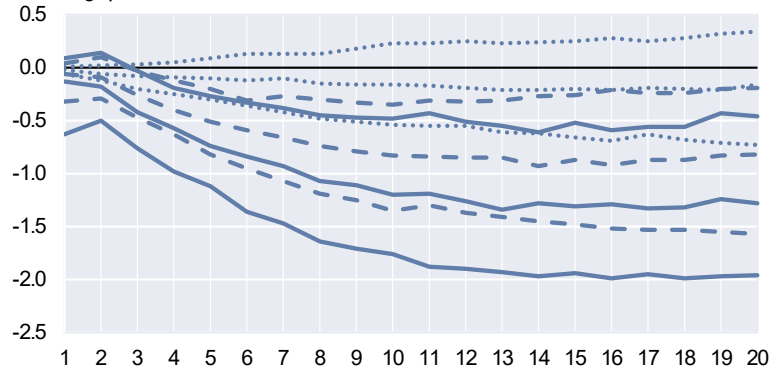


How do unemployment shocks of different sizes affect core inflation?

Impulse response functions of core inflation to different positive shocks

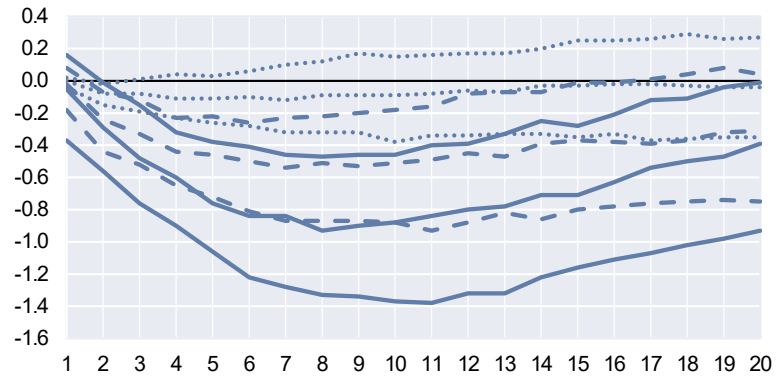
Czechia

Percentage points



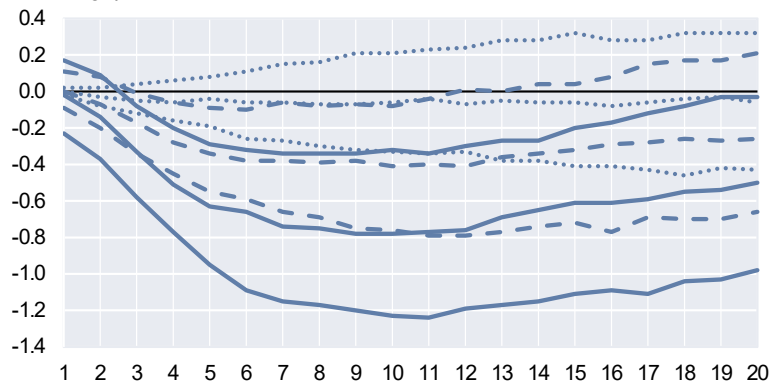
Hungary

Percentage points



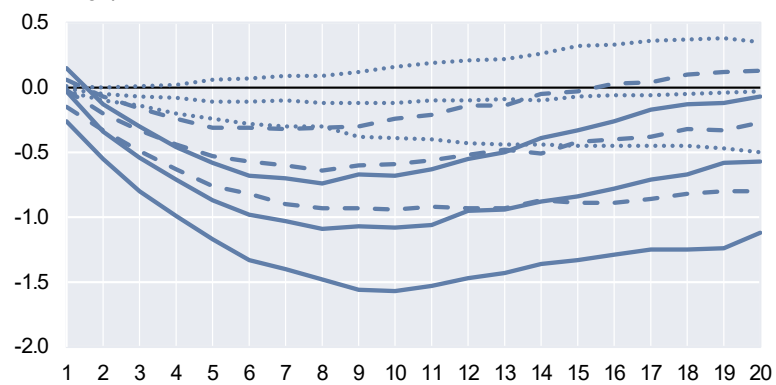
Poland

Percentage points



Romania

Percentage points



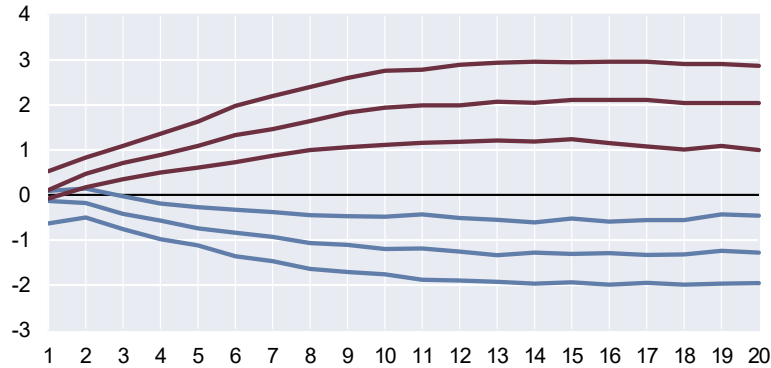
Source: Authors' calculations

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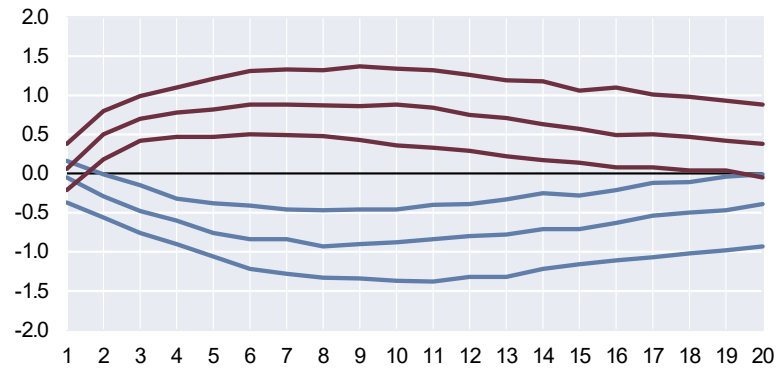
Czechia

Percentage points



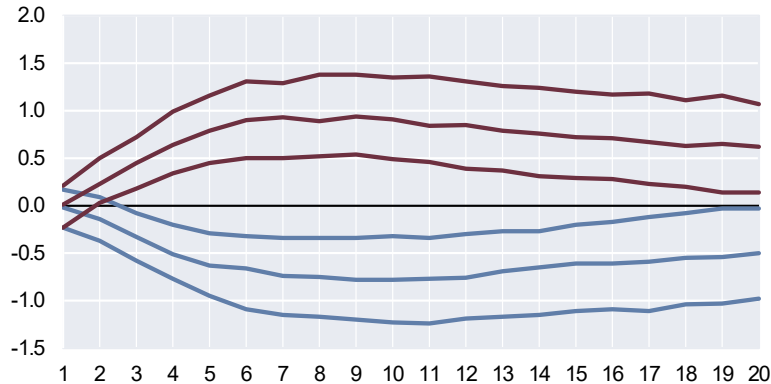
Hungary

Percentage points



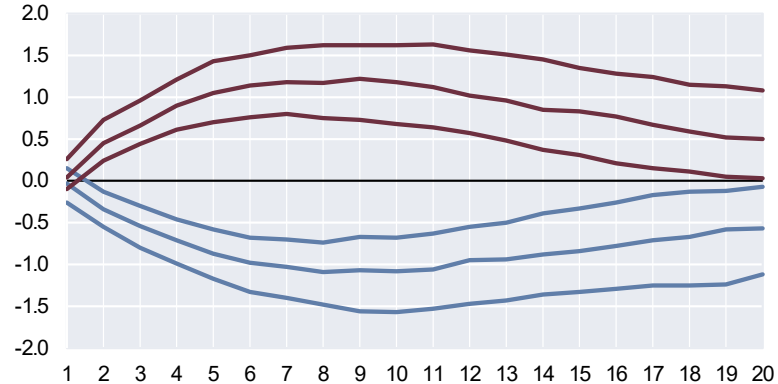
Poland

Percentage points



Romania

Percentage points



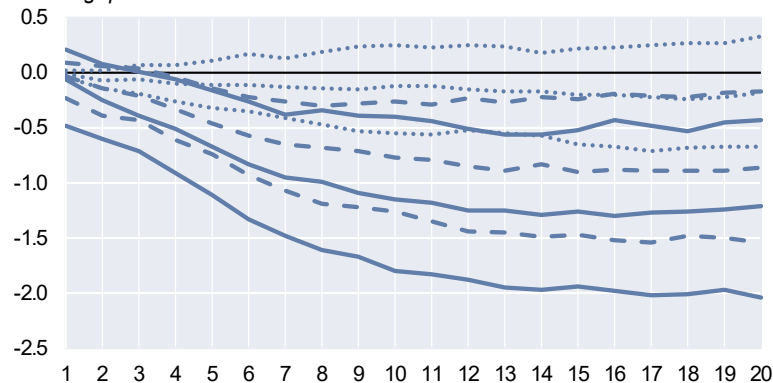
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Note: Median and 16th and 84th credible intervals of the posterior distribution of the dynamic responses to a strong positive (blue line) and strong negative (purple line) unemployment

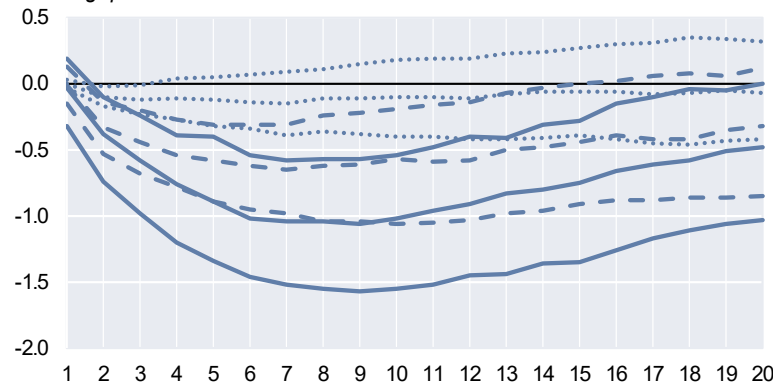
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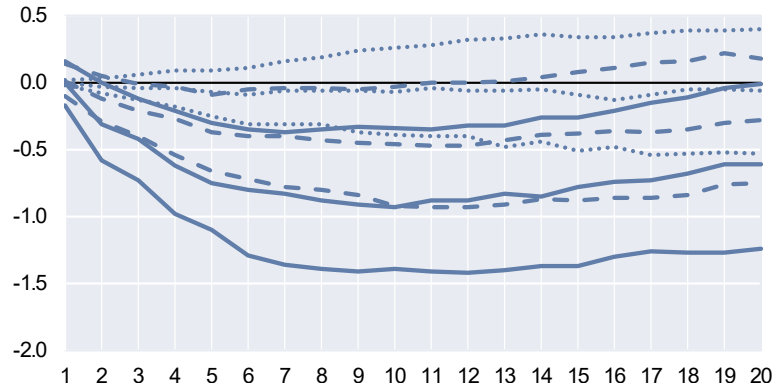
Czechia
Percentage points



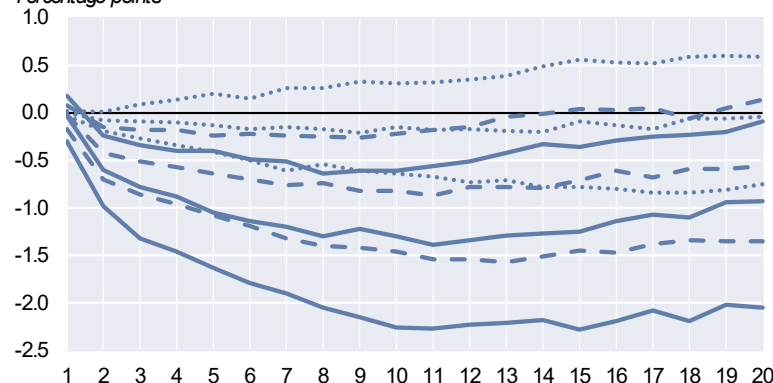
Hungary
Percentage points



Poland
Percentage points



Romania
Percentage points



Source: Authors' calculations

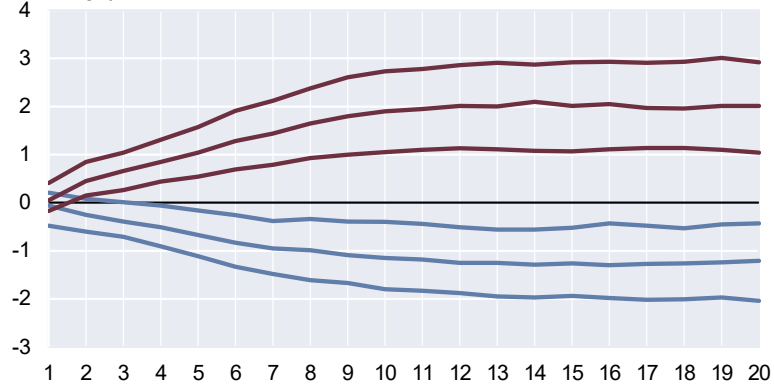
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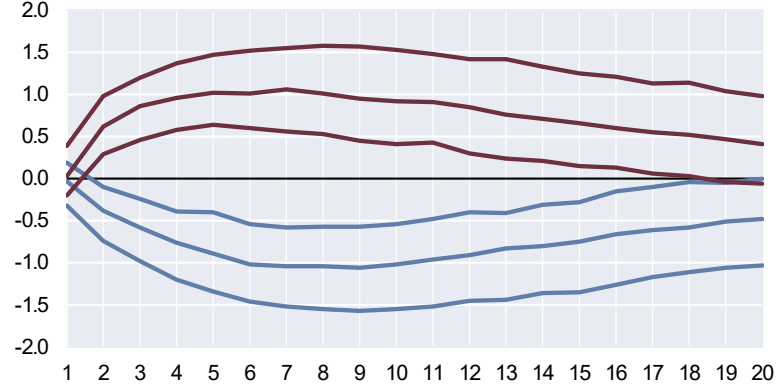
Czechia

Percentage points



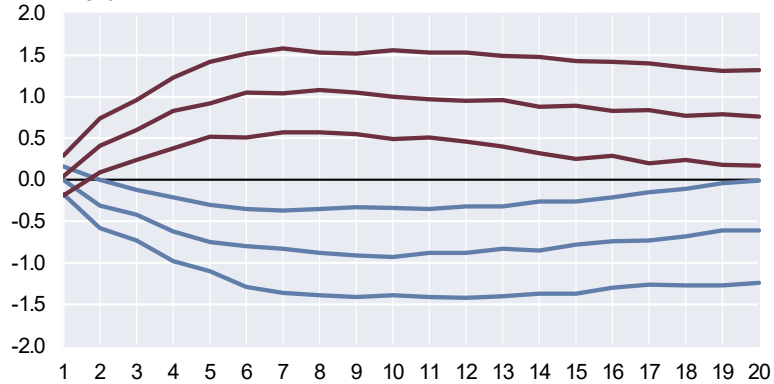
Hungary

Percentage points



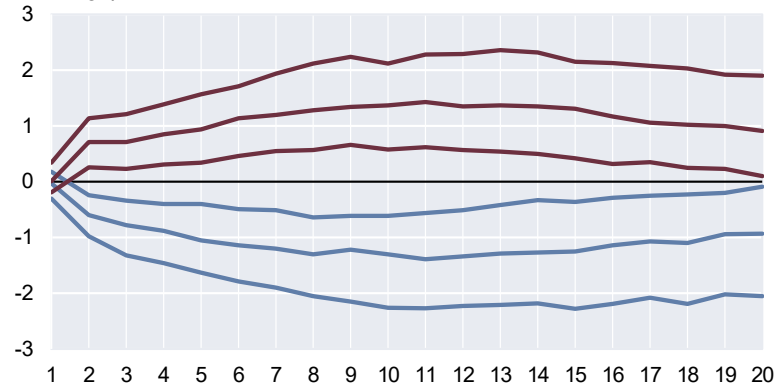
Poland

Percentage points



Romania

Percentage points



Source: Authors' calculations

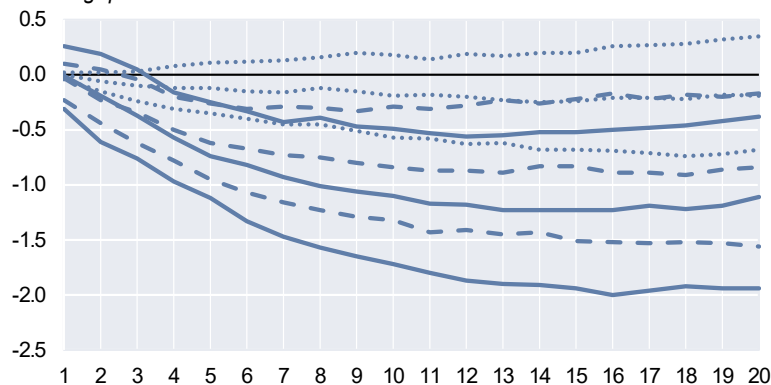
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Impulse response functions of noncyclical core inflation to different positive shocks

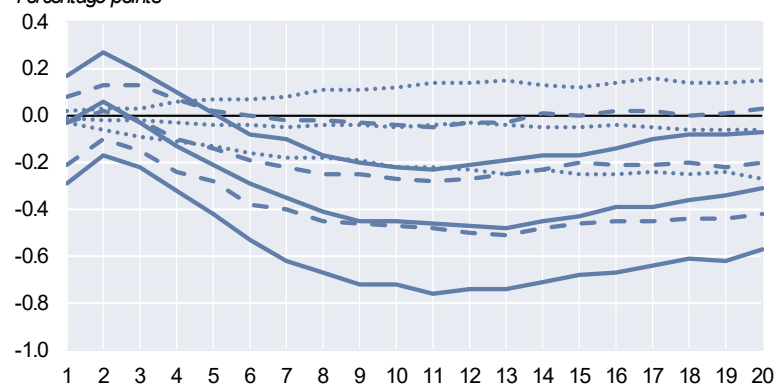
Czechia

Percentage points



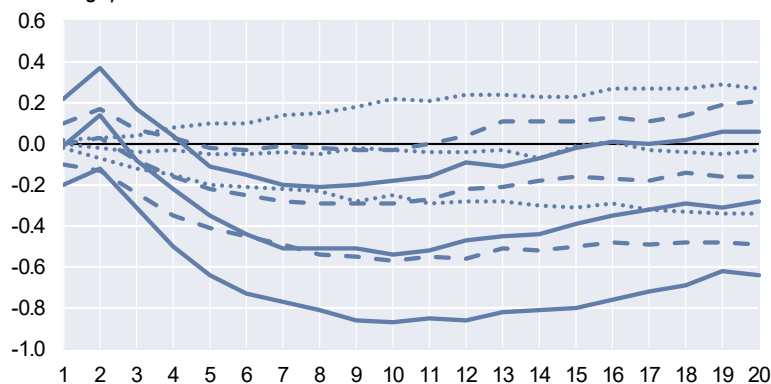
Hungary

Percentage points



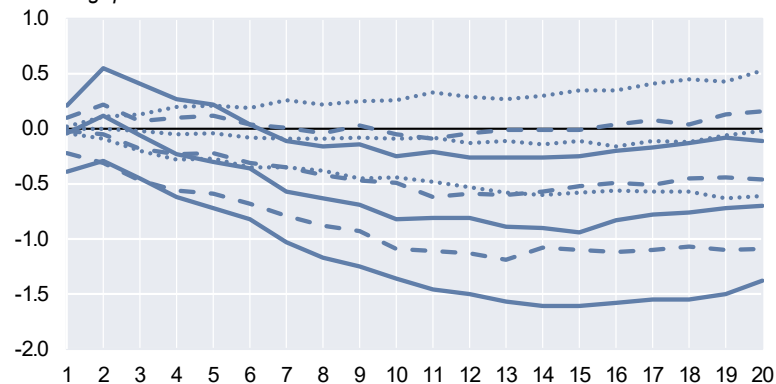
Poland

Percentage points



Romania

Percentage points



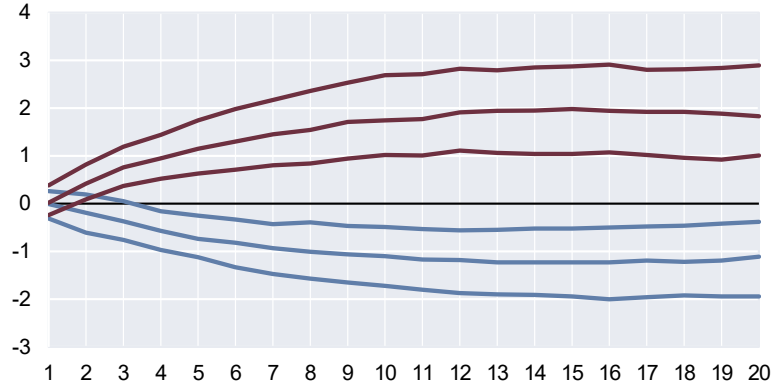
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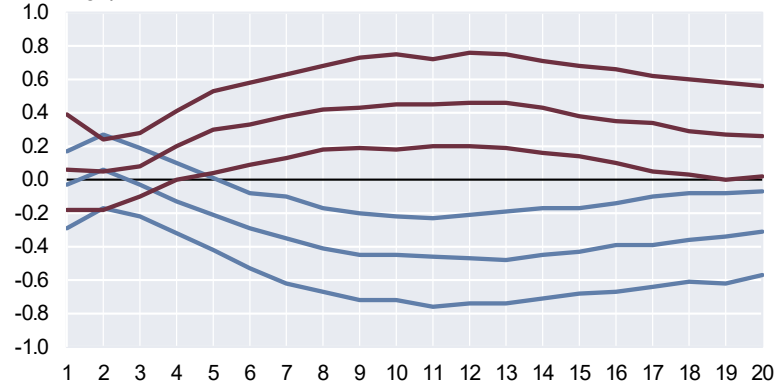
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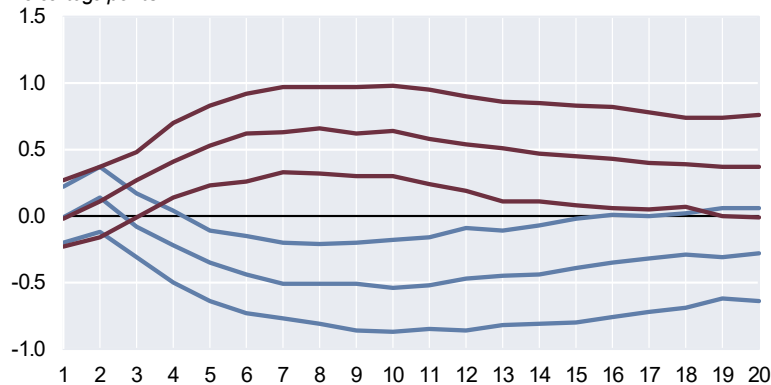
Czechia
Percentage points



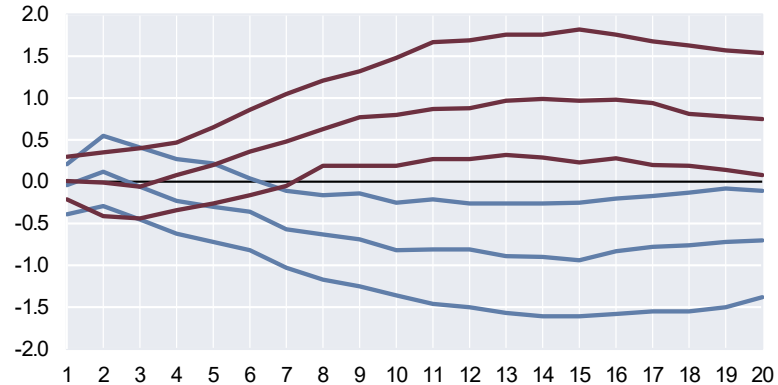
Hungary
Percentage points



Poland
Percentage points



Romania
Percentage points



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