
Czech Monetary Policy Transmission

Stylized facts and the role of FPAS

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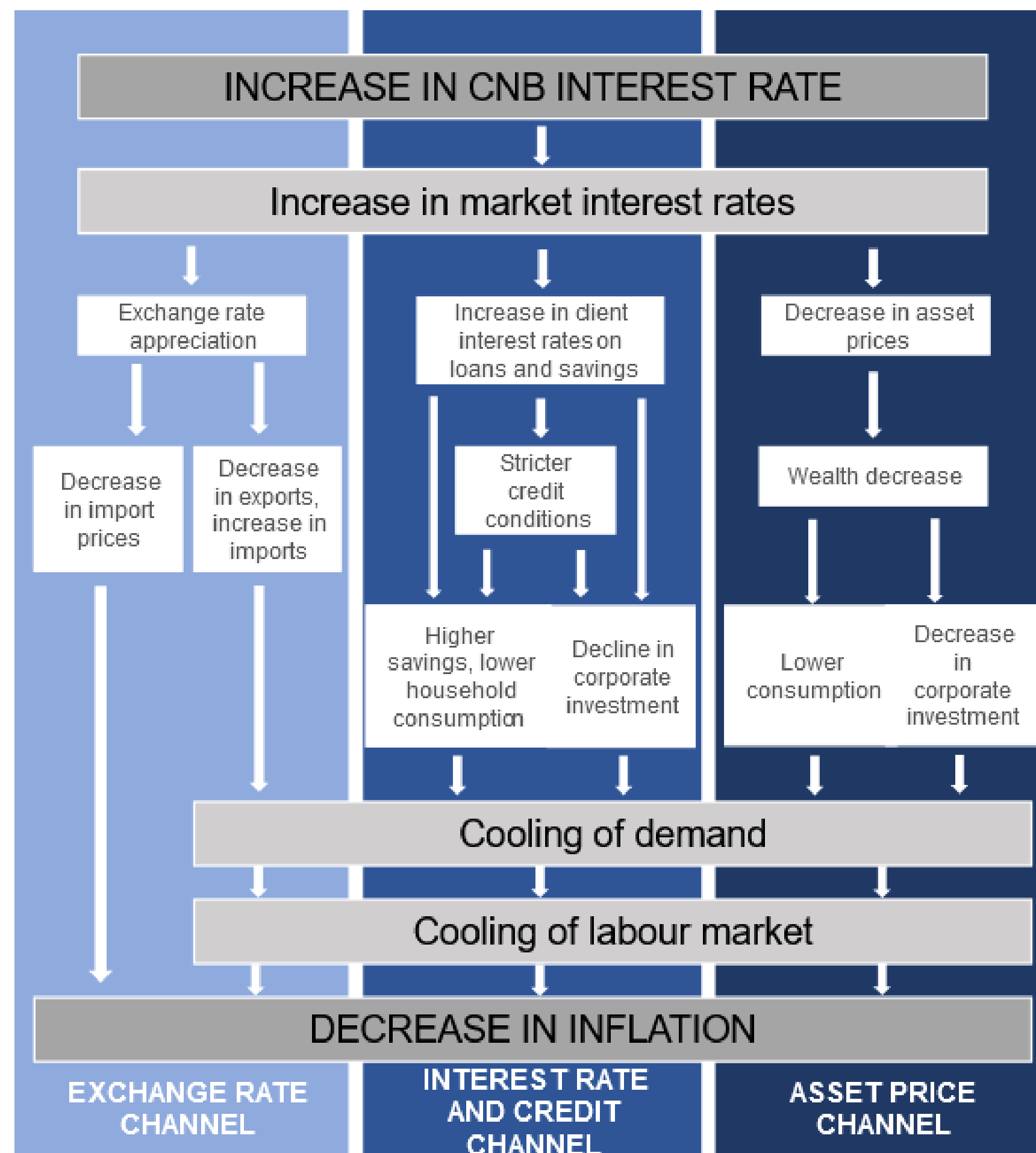
CNB Board Member

Webinar of the National Bank of Ukraine:

Inflation Targeting in a World of Large and Persistent Shocks

November 25, 2022

Czech transmission mechanism



Source: CNB, Autumn 2021 Monetary Policy Report

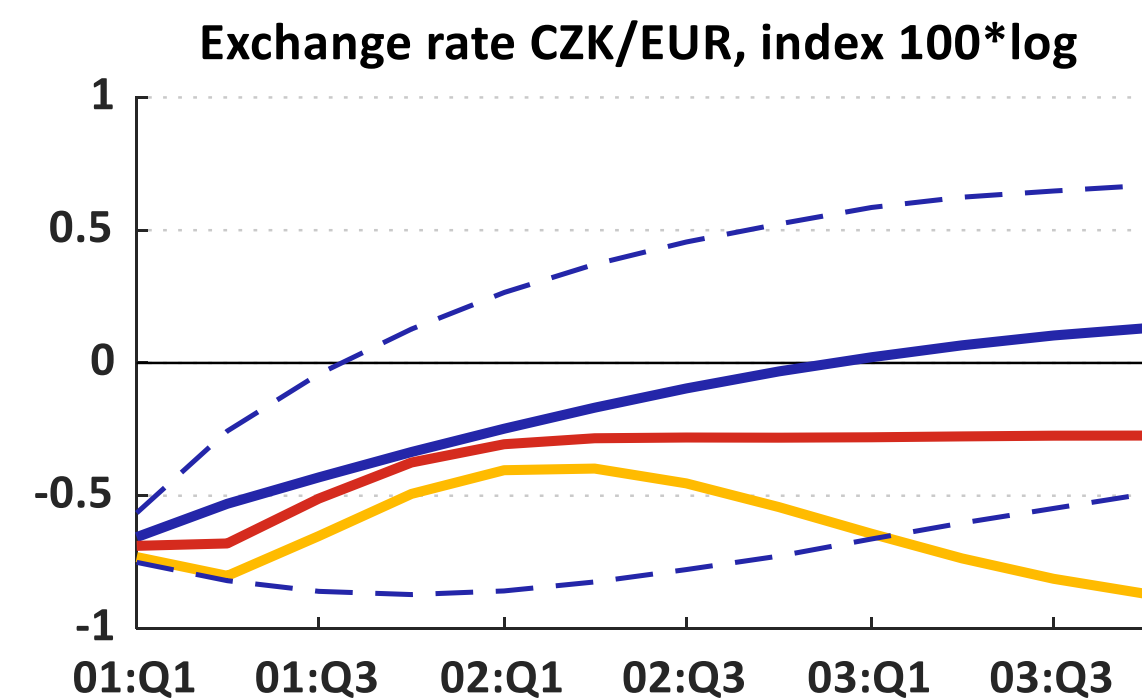
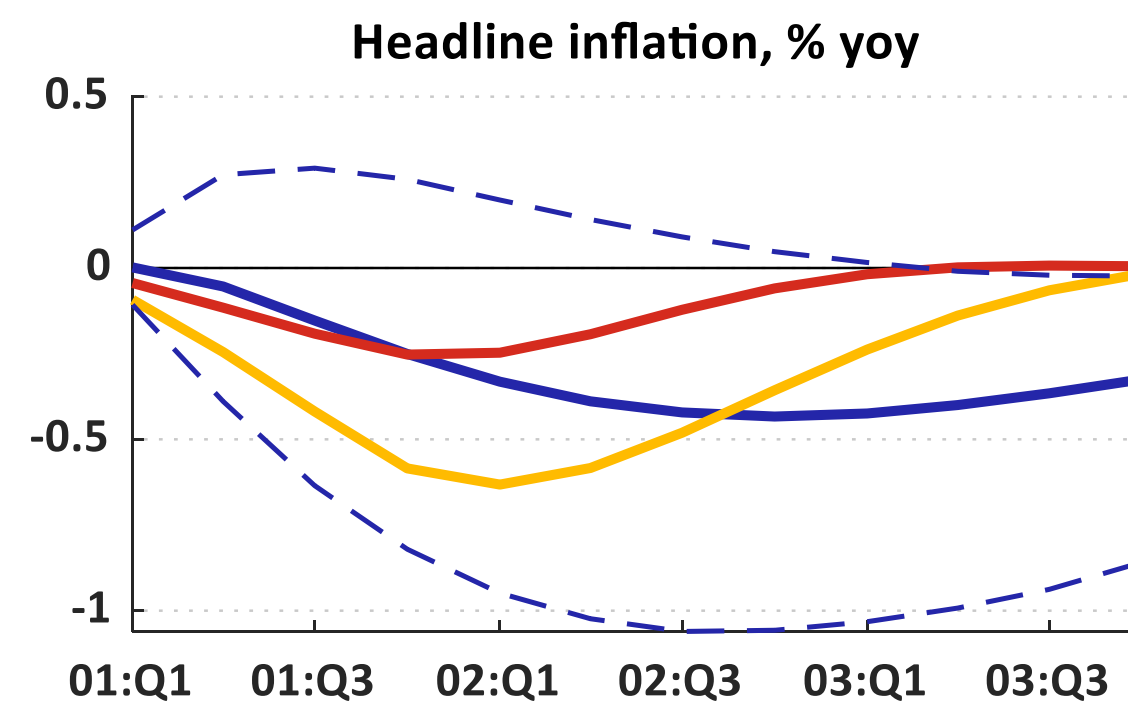
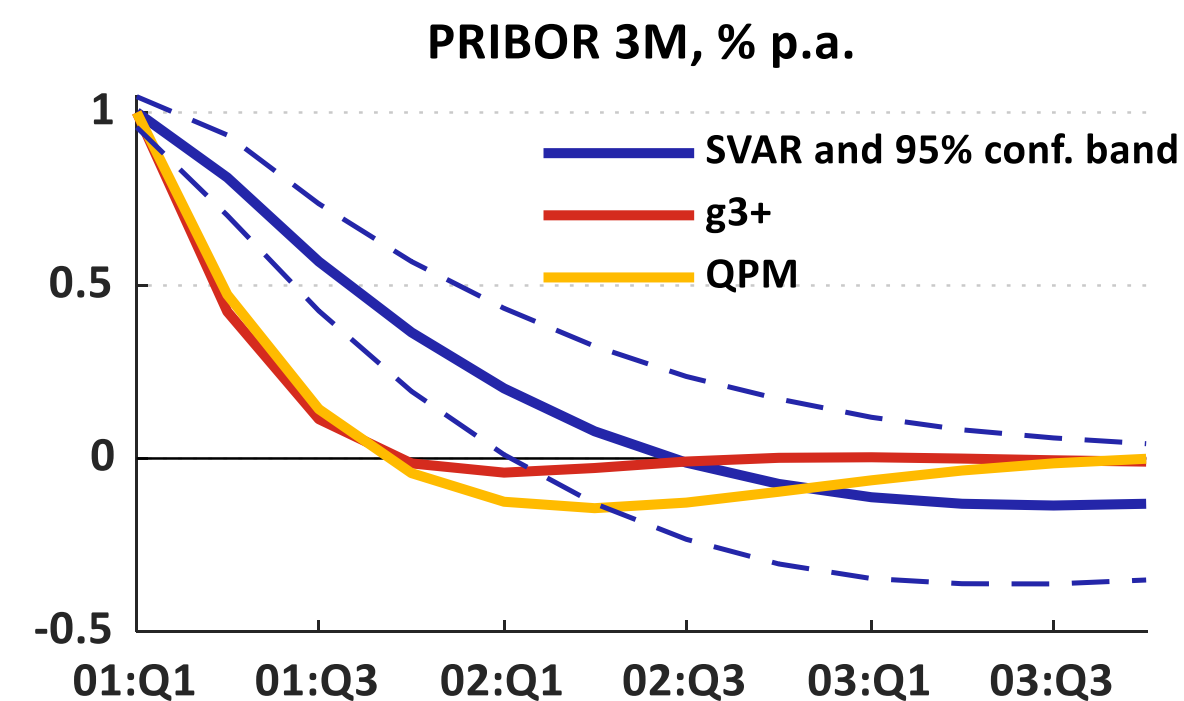
Key transmission channels captured explicitly in the **core FPAS model g3+**:

- exchange rate channel,
- interest rate channel,
- expectations channel.

Other channels incorporated implicitly via model structure and calibration.

A **consensual view** on the main channels and their parametrization **established and accepted in the past**. However, not only **magnitudes but even directions** are **questioned** in public debates nowadays.

Stylized facts – Response to higher policy rates



Source:
SVAR: CNB, Autumn 2021 Monetary Policy Report
g3+: Brázdík et al., 2020.
QPM: Hlédík and Viček, 2018.

Transmission mechanism is **difficult to identify** using empirical data due to large shocks, structural changes and econometric issues.

Transmission mechanism is in place and working in the Czech case.

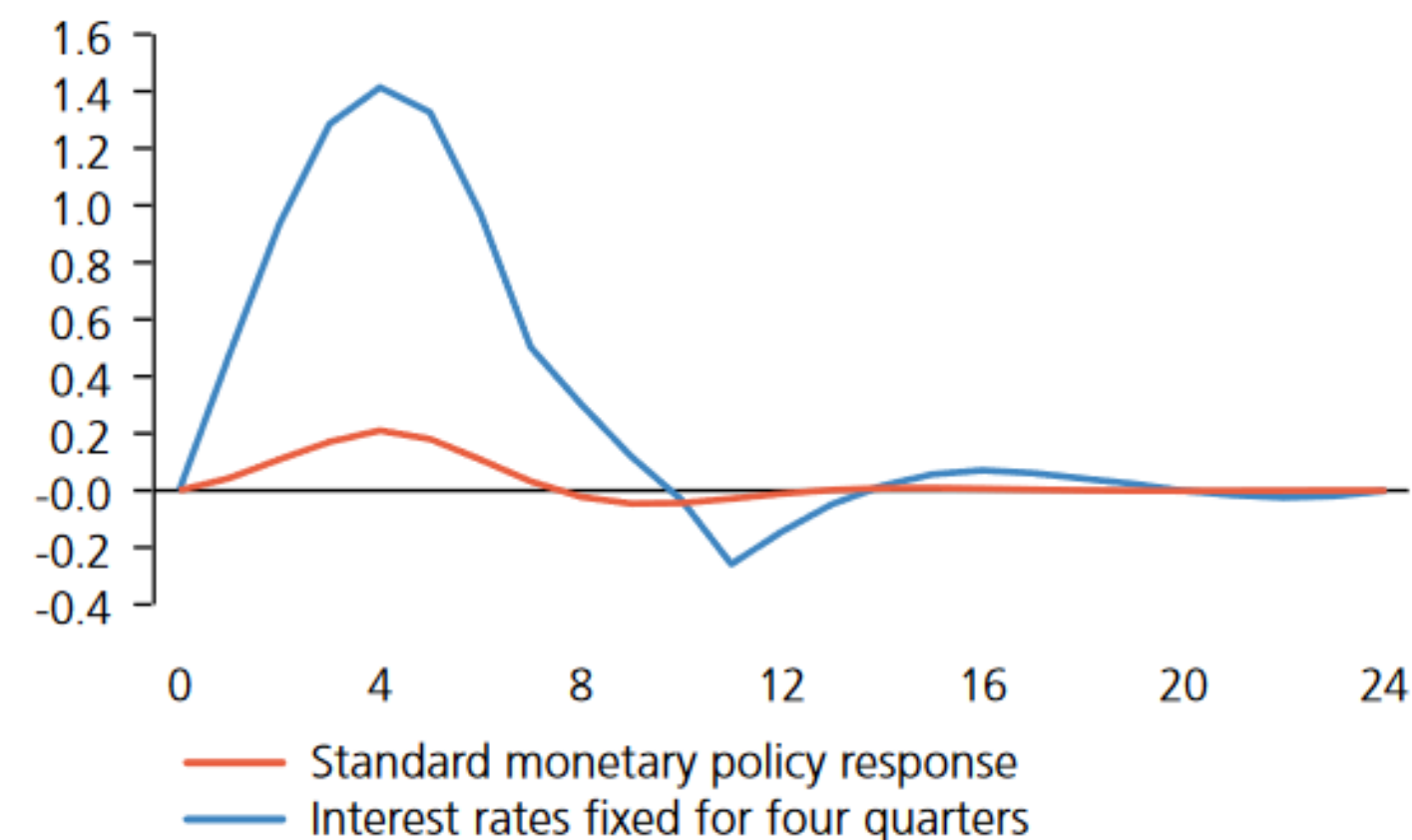
Differences among estimates and models, but still reasonable from monetary policy perspective.

Stylized facts – Exchange rate pass-through

MODEL RESPONSES OF INFLATION TO A 5% DEPRECIATION

The rise in inflation in response to a depreciation shock is substantially stronger if the central bank does not respond by changing policy rates

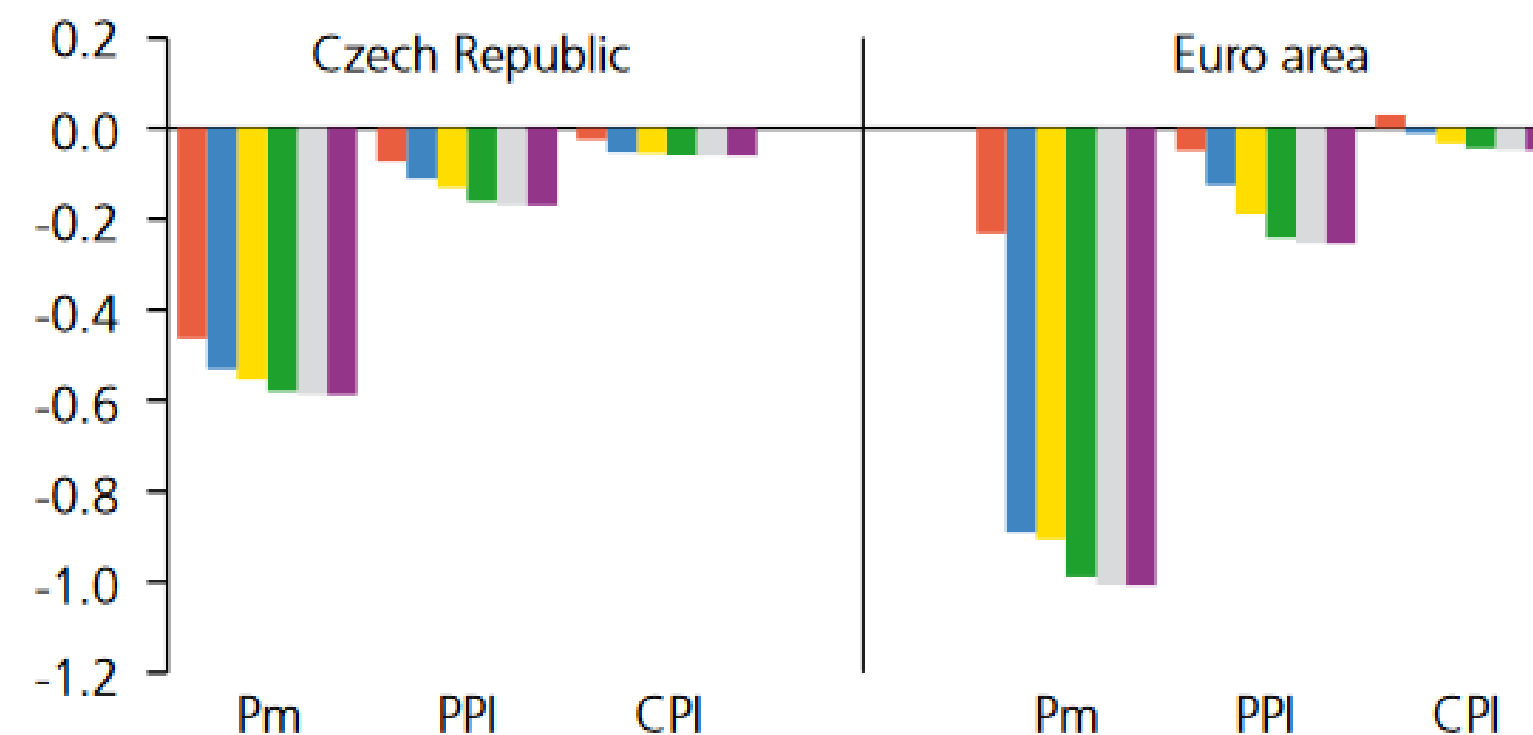
(annual changes in percentage points; horizontal axis = number of quarters; source: Franta et al. (2014): "The exchange rate as an instrument at zero interest rates: The case of the Czech Republic", CNB RPN 3/2014)



EMPIRICAL PASS-THROUGH OF THE EXCHANGE RATE TO PRICES

Prices respond relatively quickly to an exchange rate shock; the exchange rate propagates to prices largely within the first three months; however, the total pass-through to consumer prices is very muted

(source: Datastream, CNB calculation)



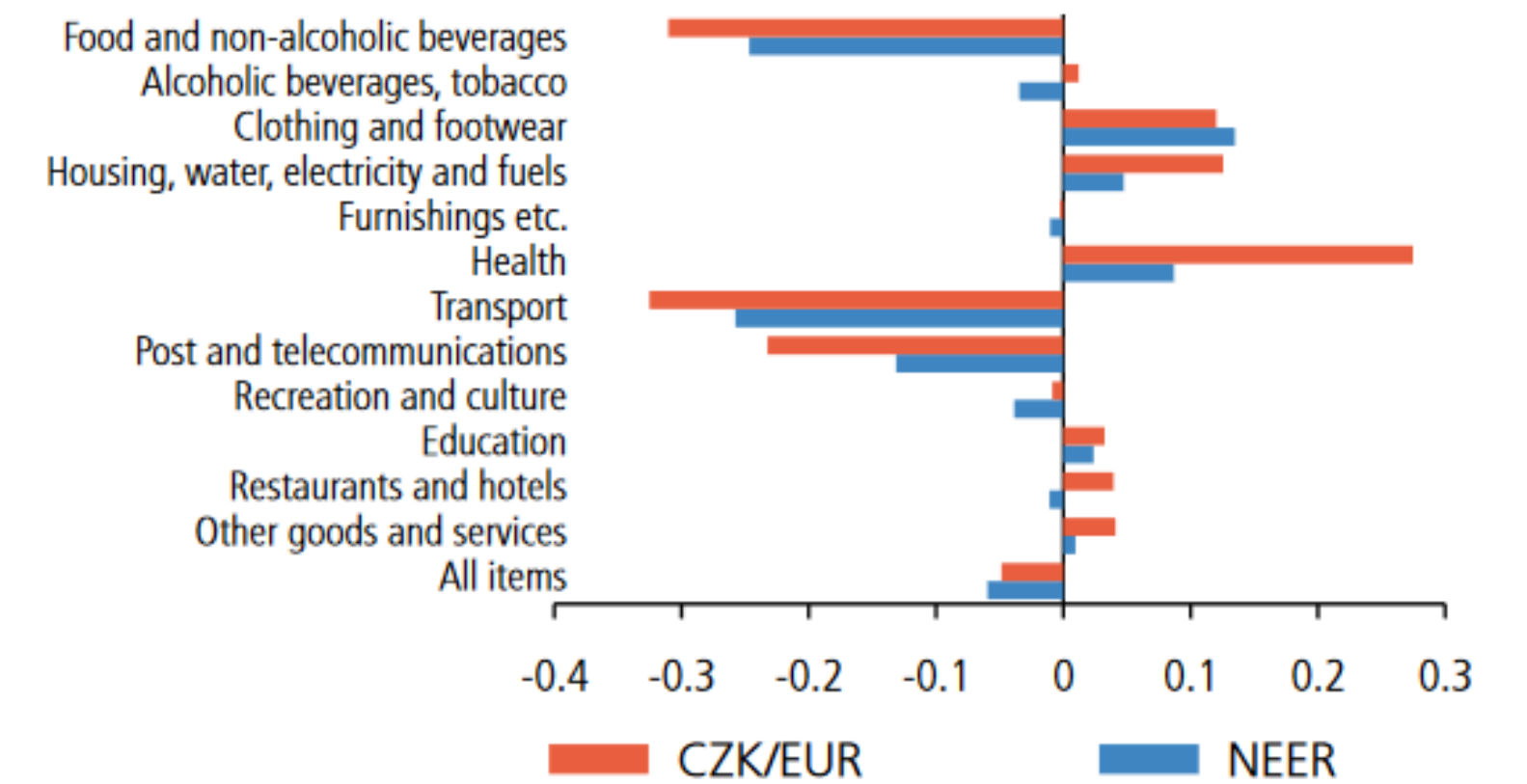
Number of months: 1 3 6 12 24 36

Note: Vector error correction model. For the methodology, see Babecká Kucharčuková, O. (2007), CNB WP 12/2007. Shock: appreciation of nominal effective exchange rate of domestic currency. Pm – import prices, PPI – industrial producer prices, CPI – consumer prices.

PASS-THROUGH OF THE EXCHANGE RATE TO INFLATION IN THE CZECH REPUBLIC

Prices of transport and food react most strongly to an exchange rate shock

(source: Datastream, CNB calculation)



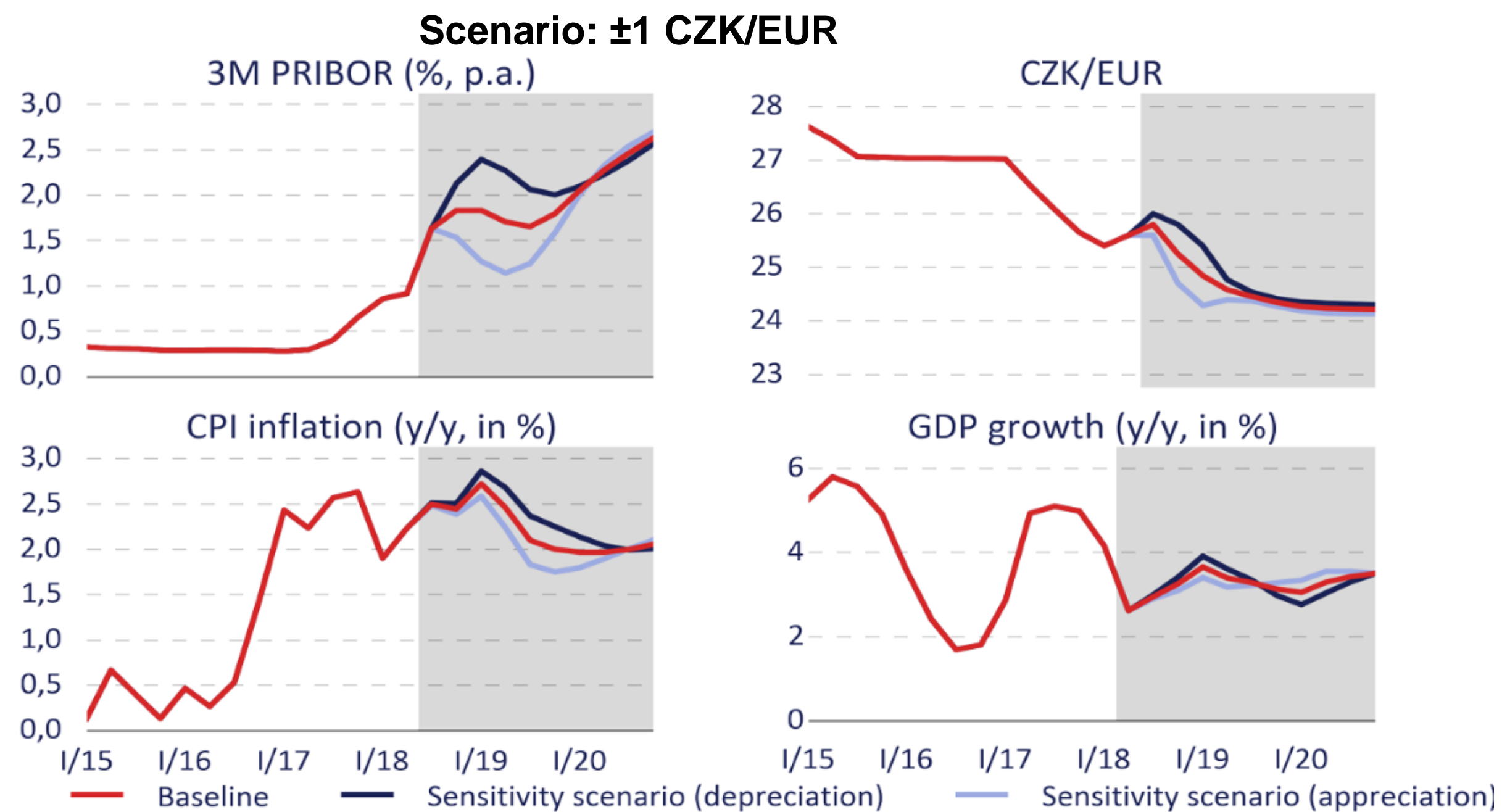
Note: Vector error correction model. For the methodology, see Babecká Kucharčuková, O. (2007), CNB WP 12/2007.

Source: CNB, Inflation Report II/2017

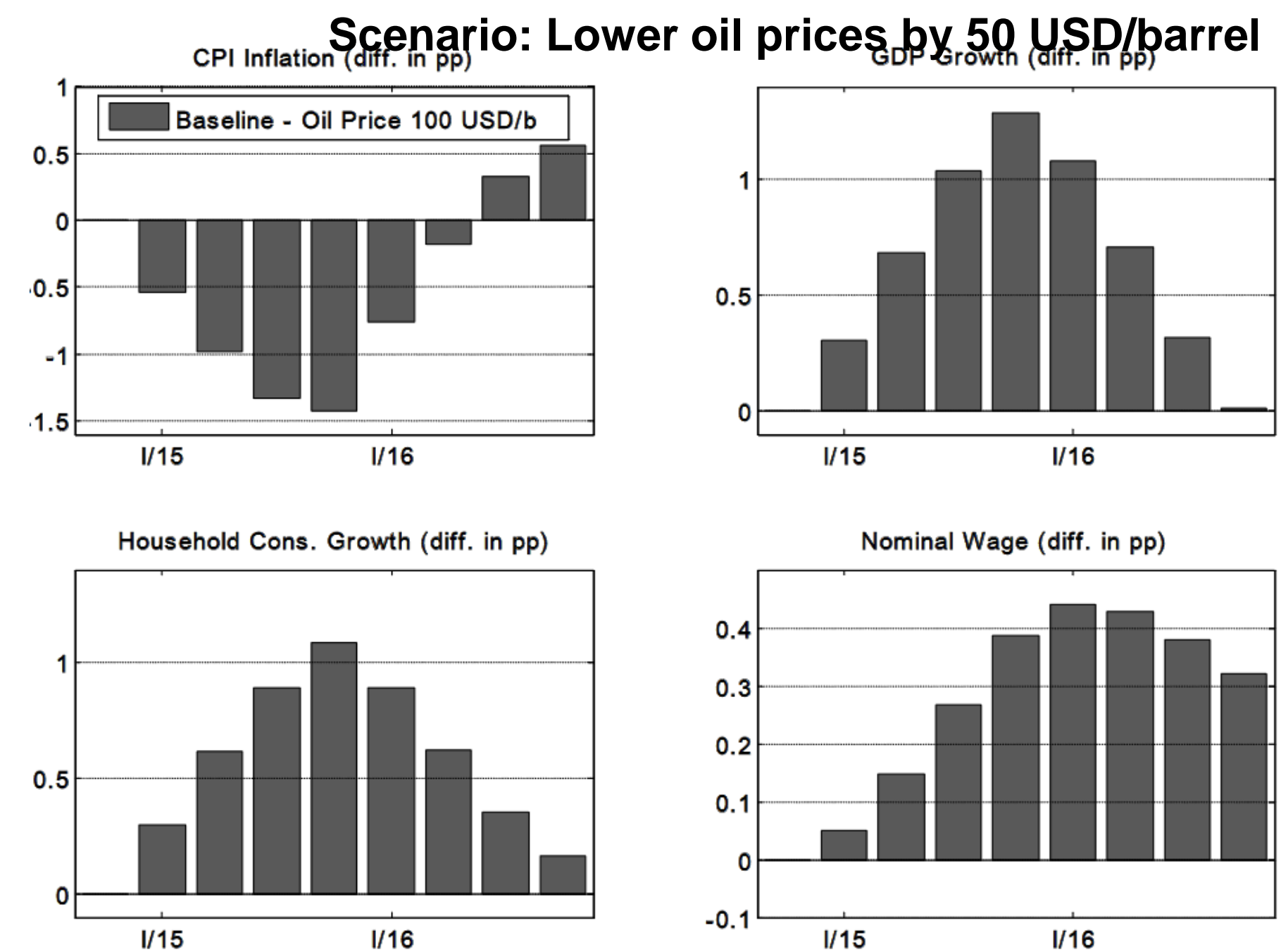
Transmission varies depending on underlying shocks.

The exchange rate pass-through depends on monetary policy responses and varies across items of CPI basket.

Role of scenarios



Source: Inflation Report August 2018



Source: Inflation Report February 2015

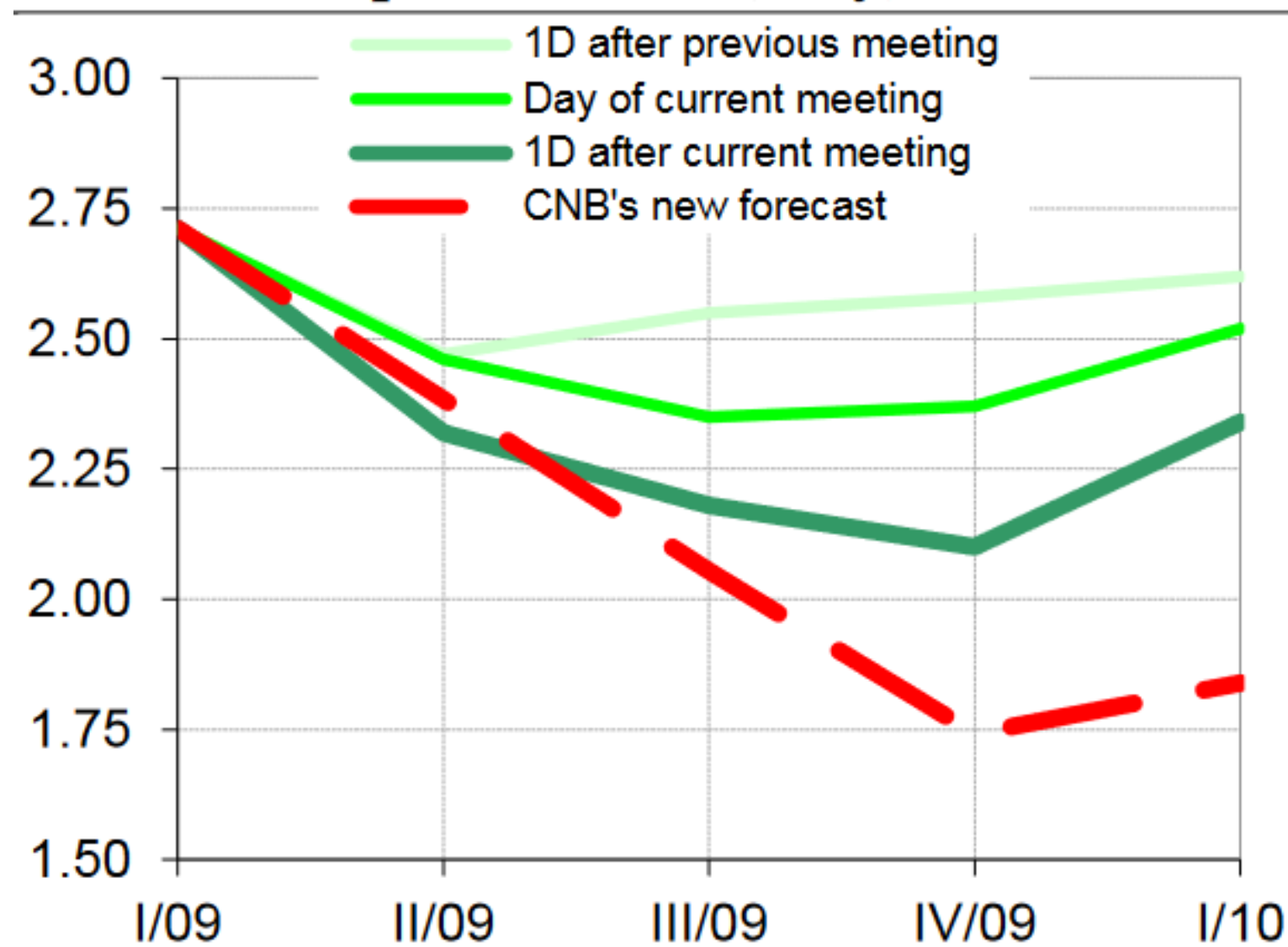
Sensitivity scenarios compiled for common shocks providing a simple “**rule of thumb**”.

A “rule of thumb” approach has been found useful for **understanding the transmission mechanism** and **facilitating policy discussions**.

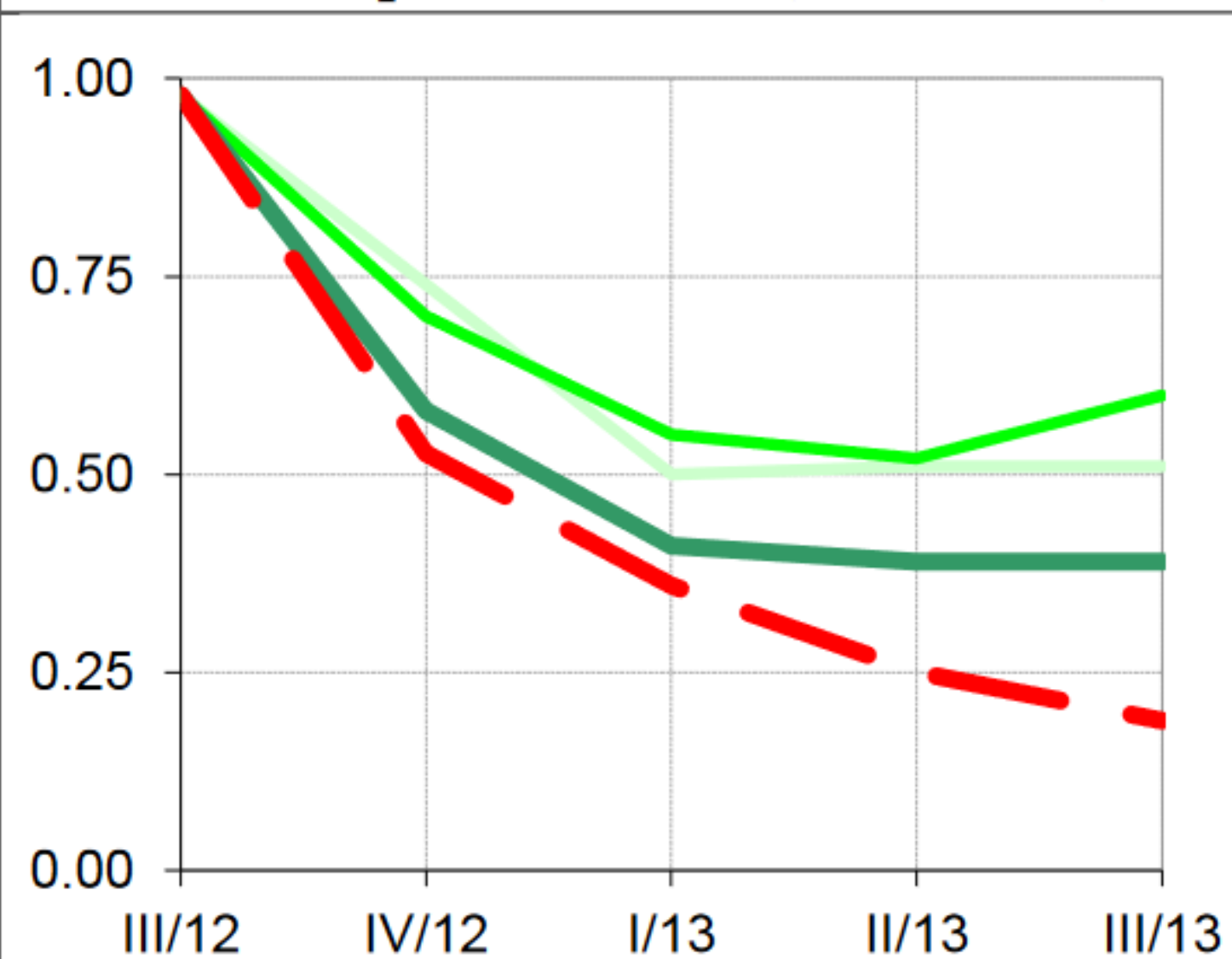
Well-functioning transmission – FRA example

PRIBOR 3M path and FRA outlook, % p.a.

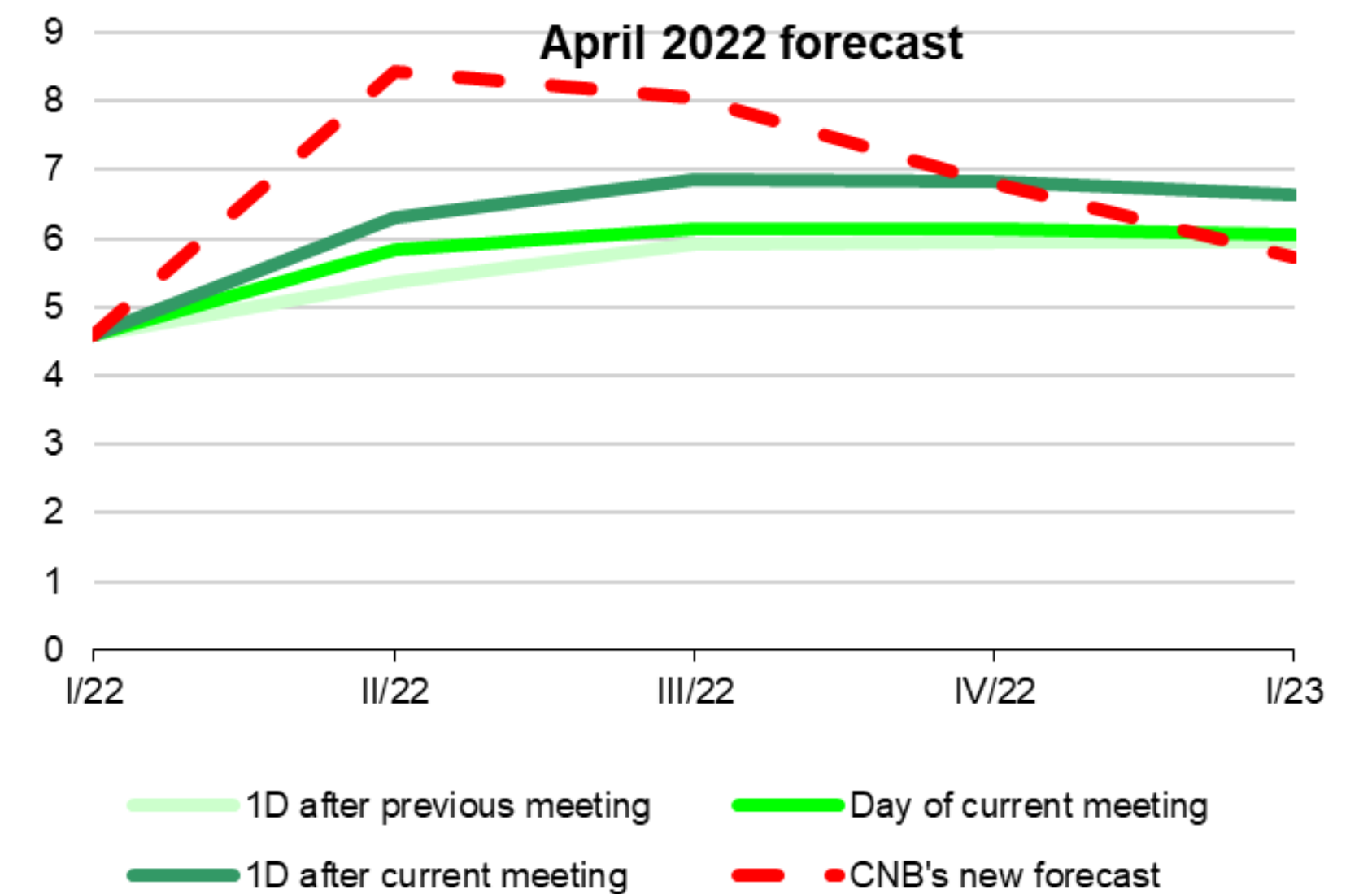
Inflation Report II/2009 (May)



Inflation Report IV/2012 (November)



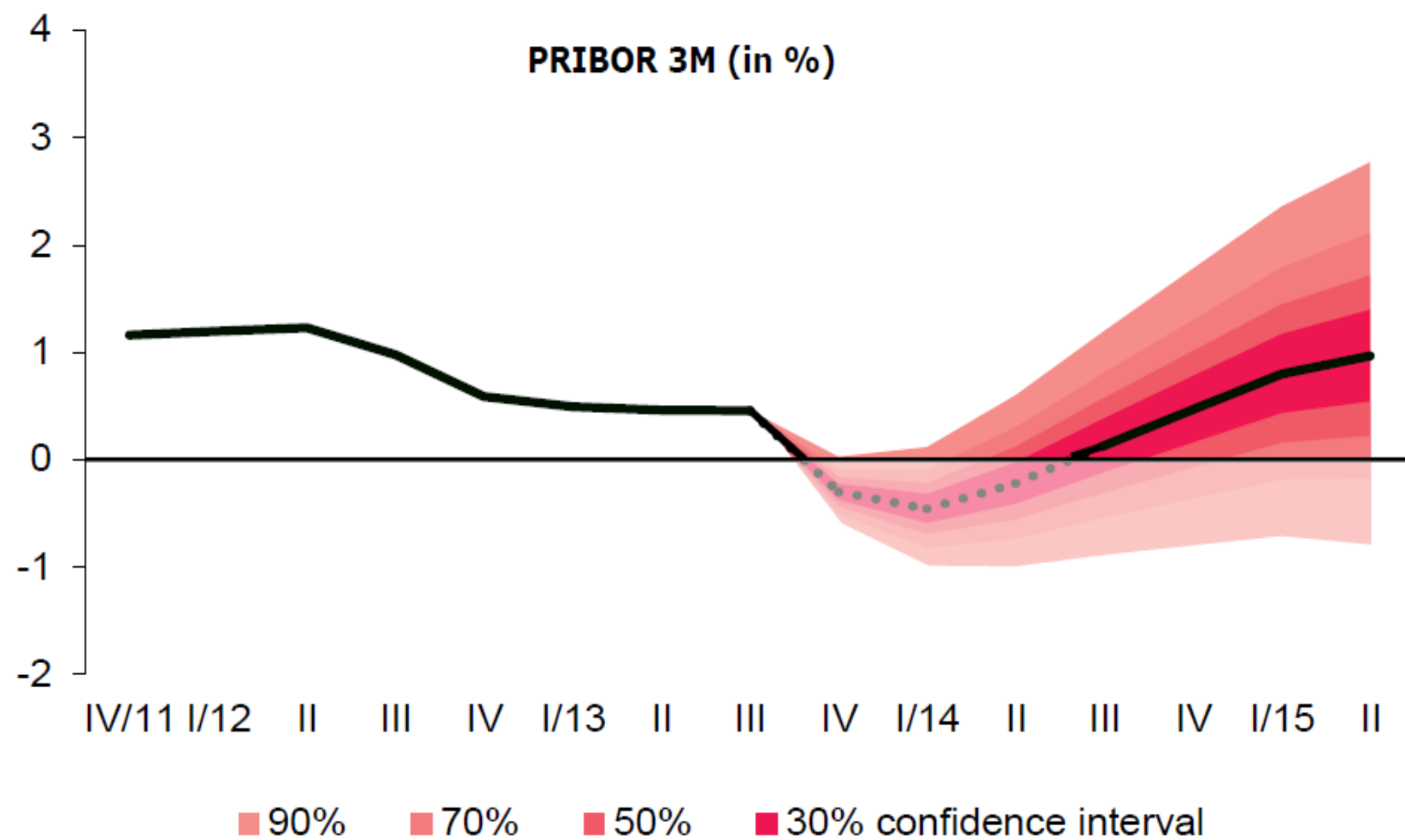
Source: Clinton et al. 2017: Czech Magic, IMF WP 17/21



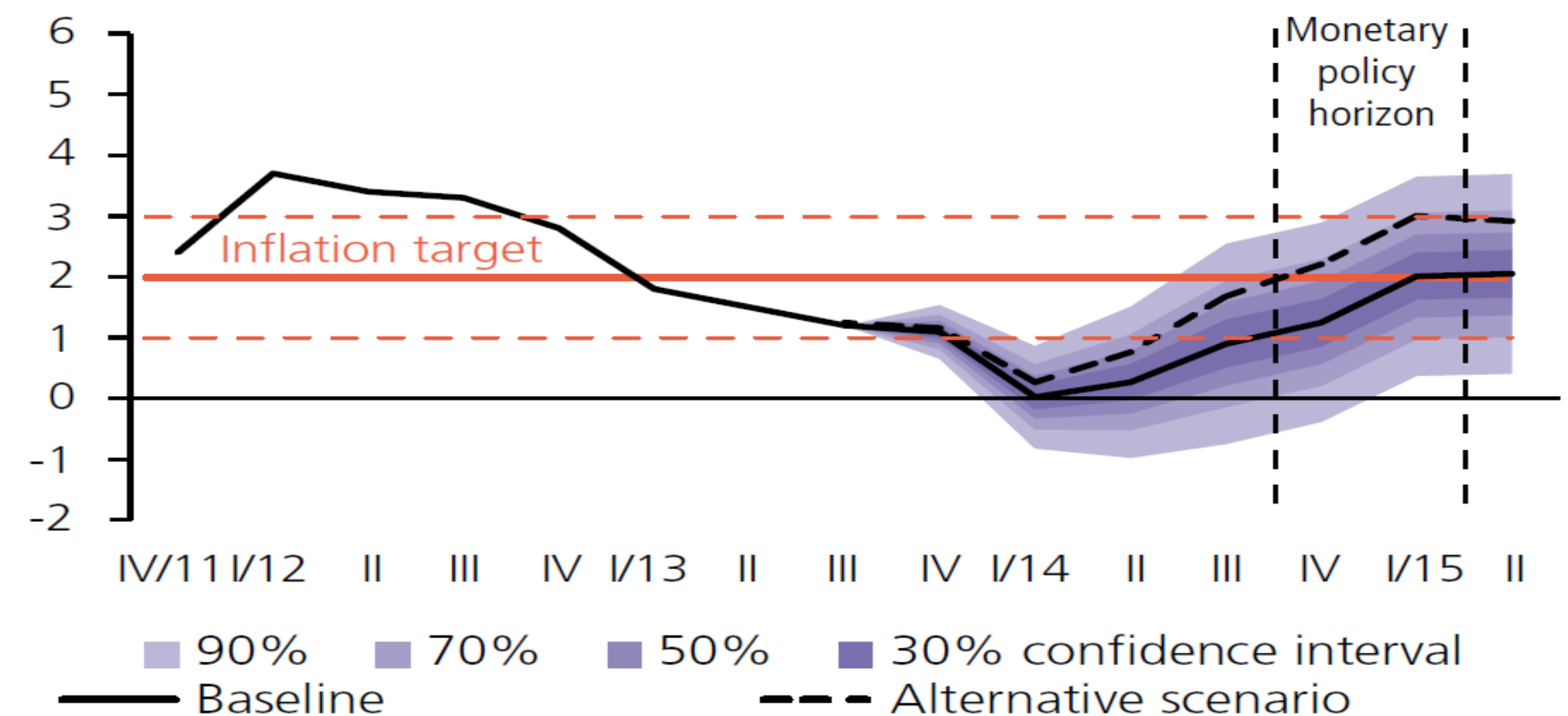
Source: CNB

Systematic and time-consistent monetary policy focused on price stability along with transparent communication and accountability promotes the transmission mechanism – endogeneity of the transmission mechanism.

Example of exchange rate commitment



The use of the exchange rate as a monetary policy instrument accelerates the return of inflation towards the CNB's target
(year on year in %)

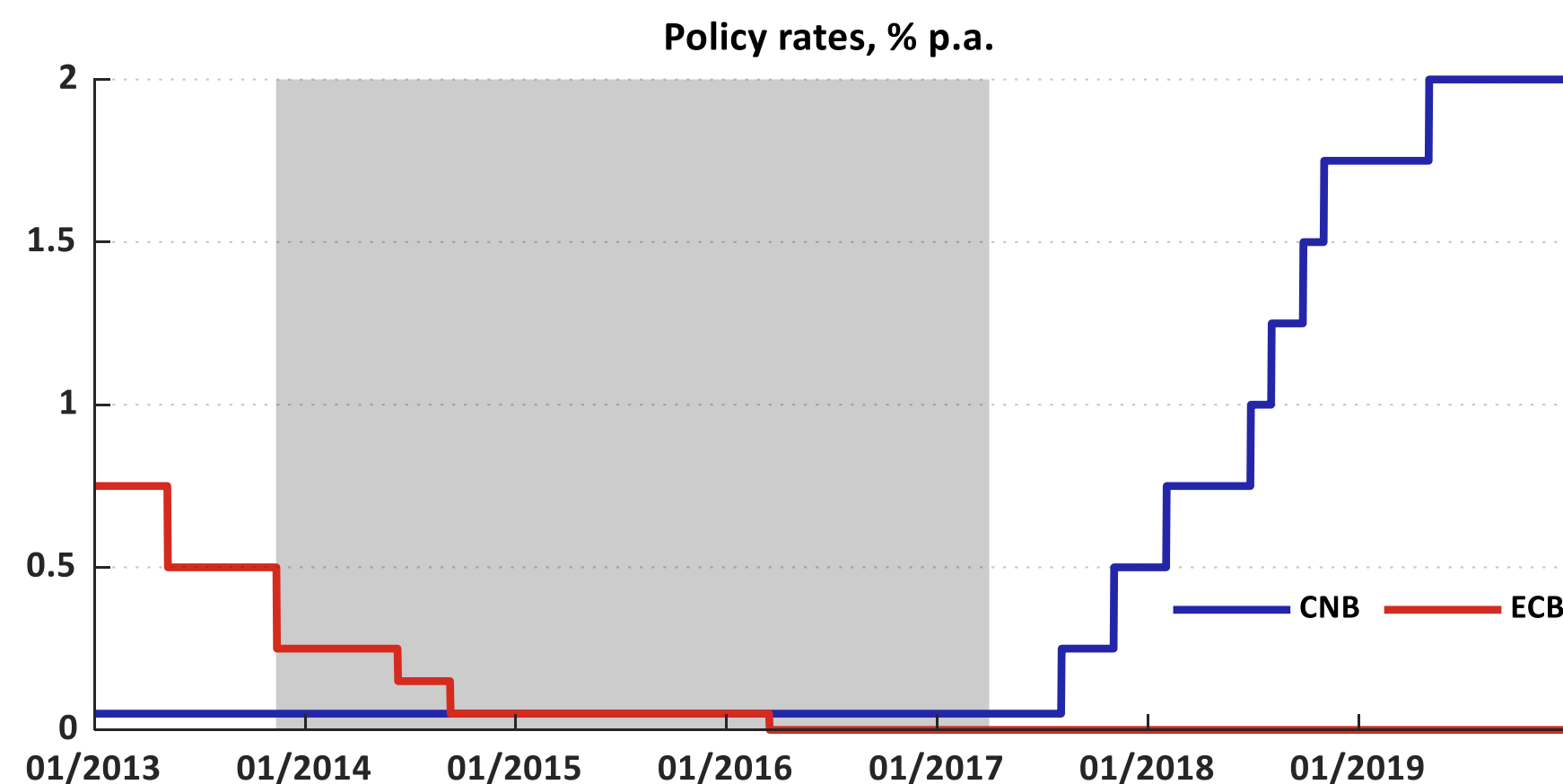
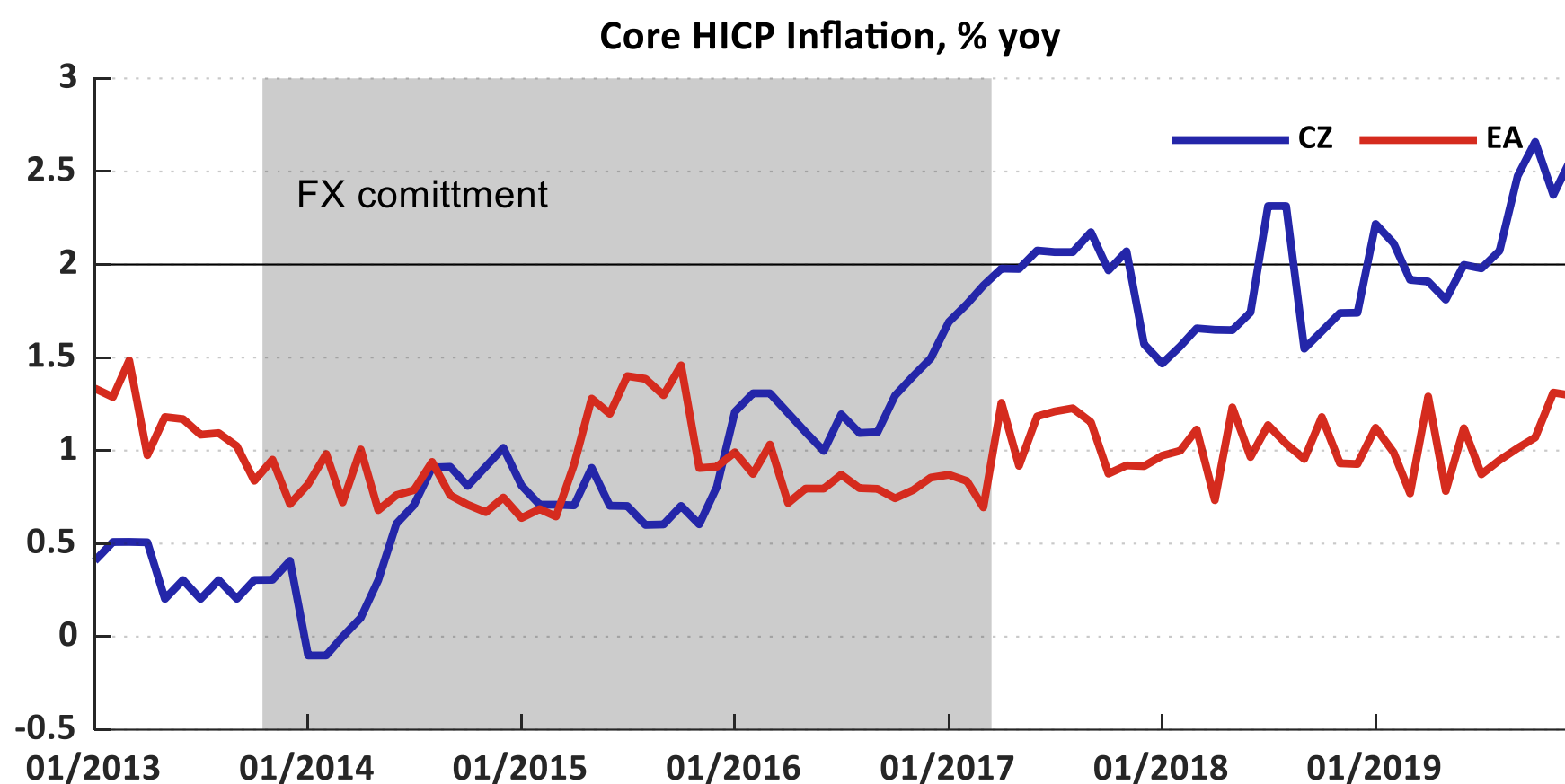


Source: CNB Inflation Report IV/2013

Key role of **FPAS** and **FPAS-based forecasts** for decision-making and communication, helping to promote the transmission mechanism.

Introduction of the FX commitment in November 2013 may serve as a successful example of **unconventional monetary policy** under the effective lower bound of interest rates.

Example of exchange rate commitment (cont.)



Effects of FX commitment in p.p., counterfactual exercise

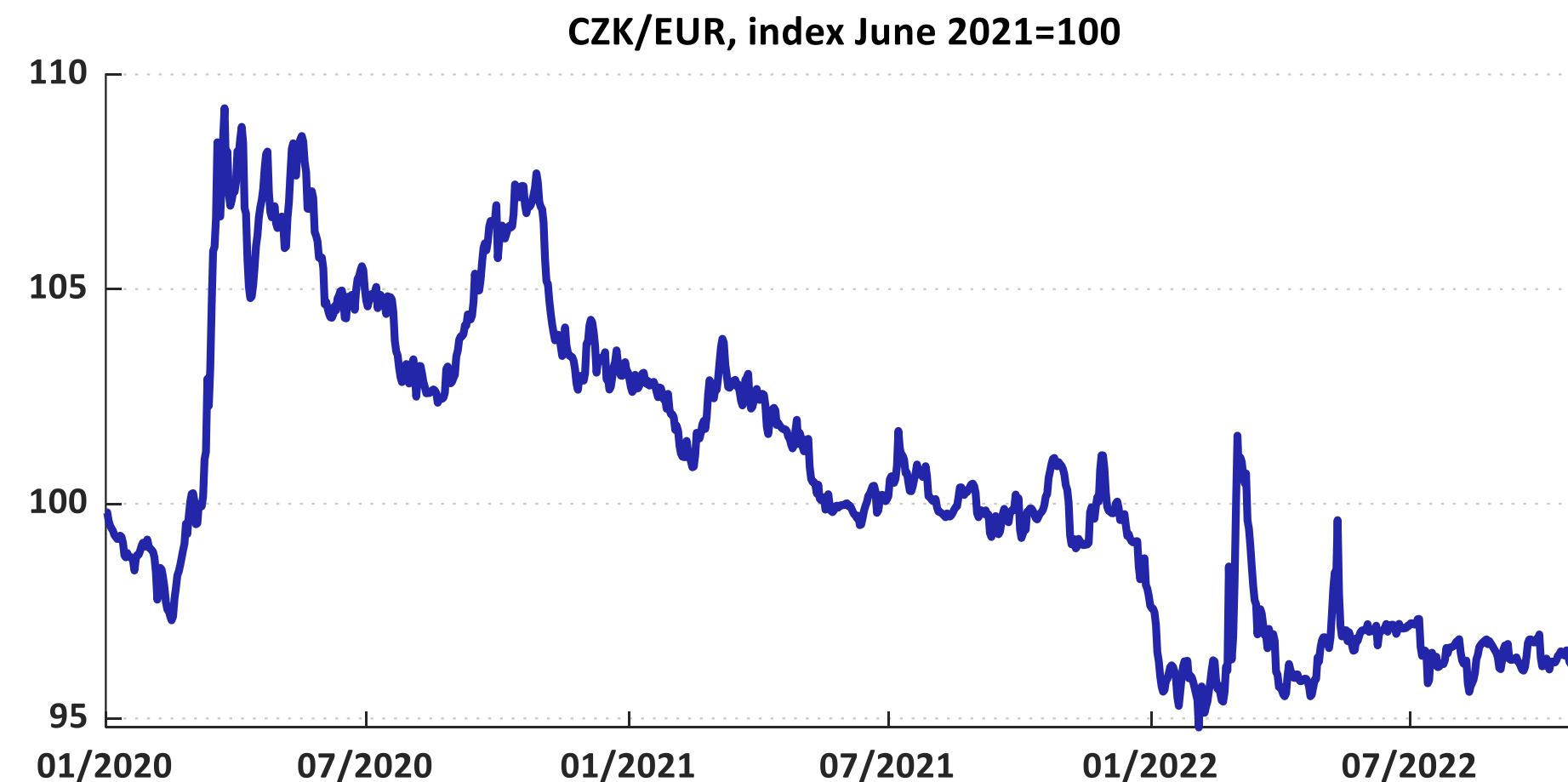
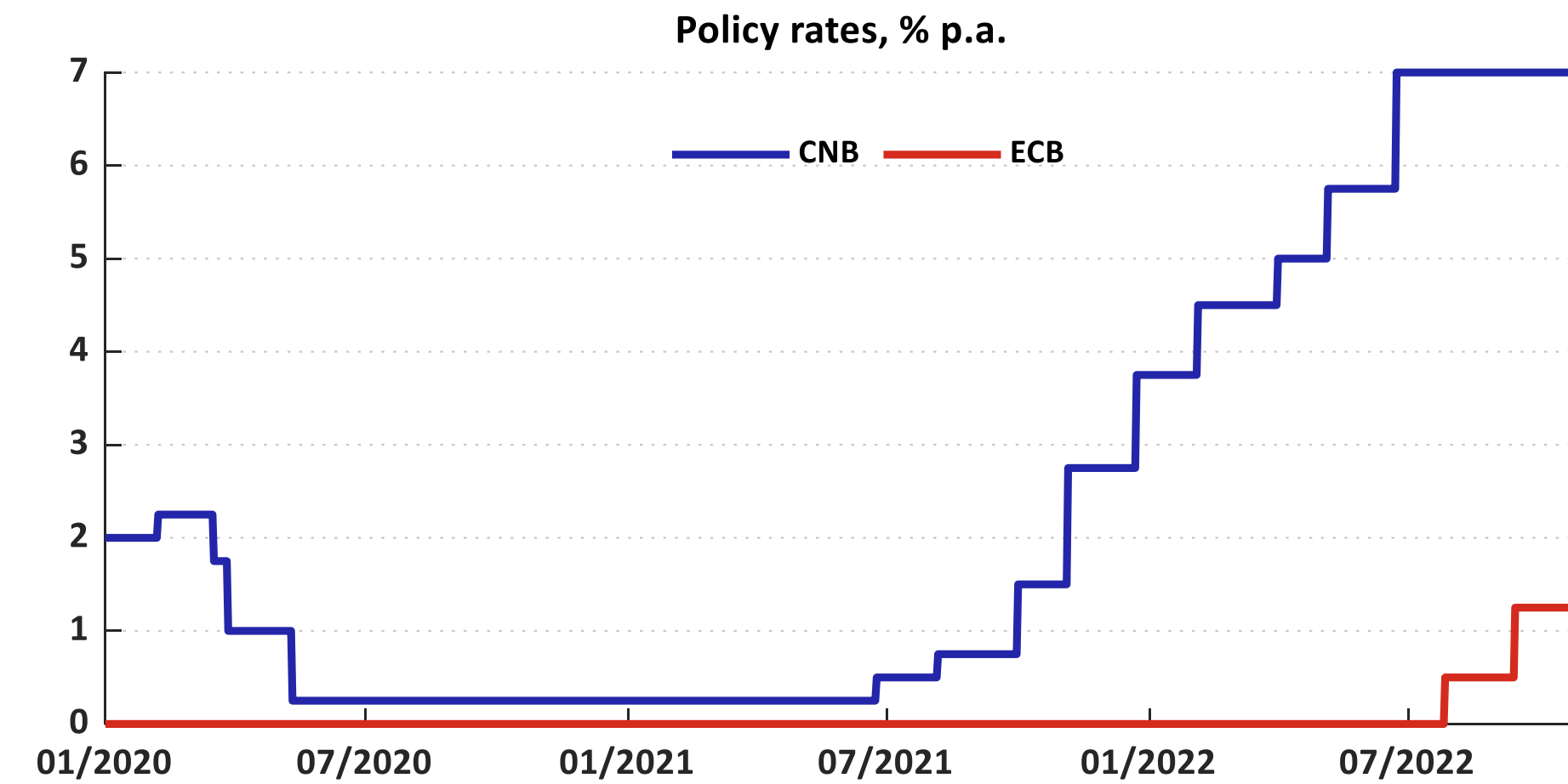
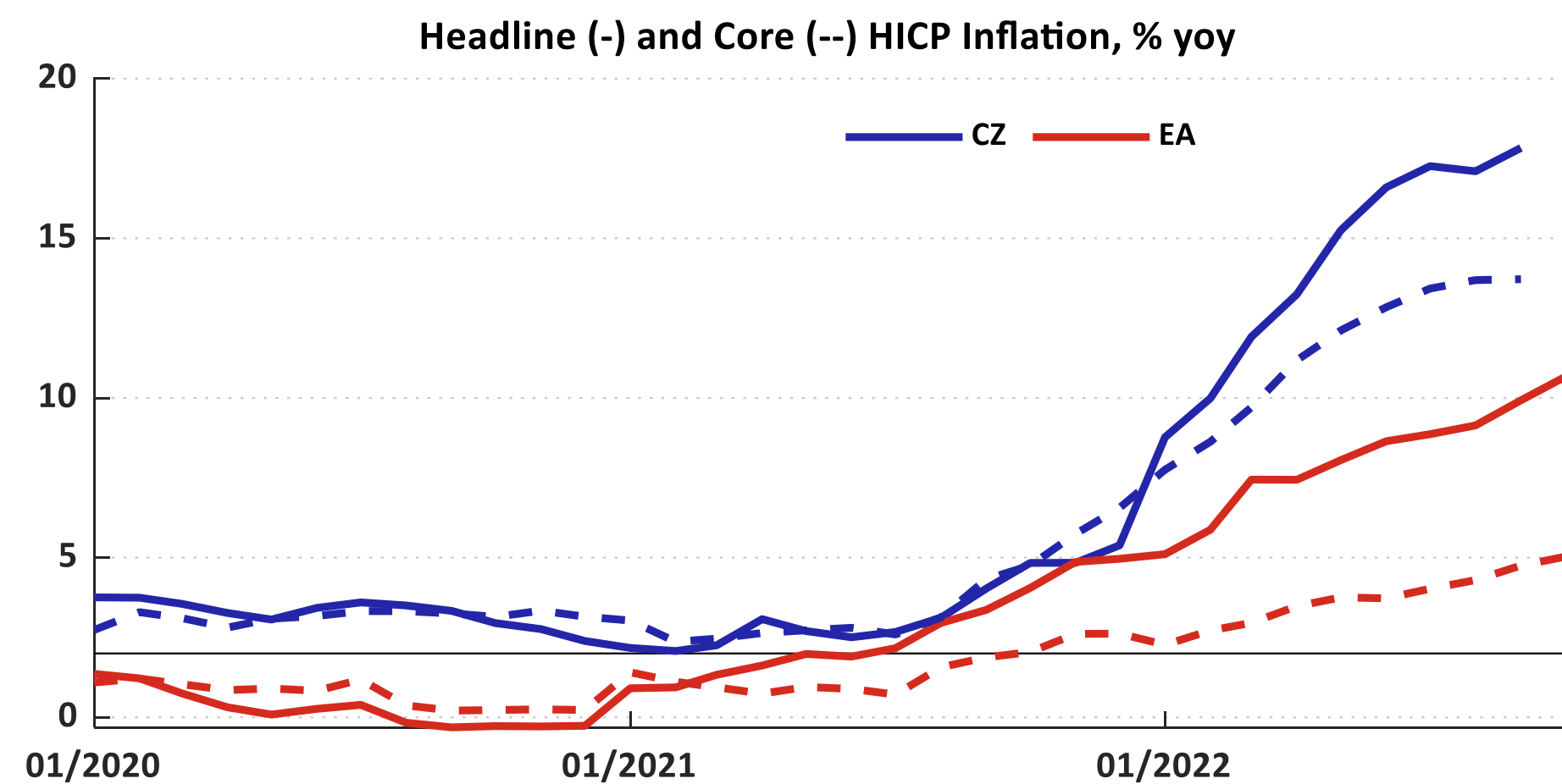
	Bruha and Tonner (2017)	Svacina (2015)	Opatrny (2016)
Inflation (2014)	0.2 – 1.3	0.5	
Inflation (2015)	0.6 – 1.7		
Inflation (2016+17Q1)			
Inflation (cumulative)	0.7 – 3	0.5	
Real GDP Growth(2014)	0.3 – 0.9	0.8	
Real GDP Growth(2015)	0.2 – 1.8		
Real GDP Growth(2016+17Q1)			
Real GDP (cumulative)	0.5 – 2.7		
Unemployment (2014)	-0.1 – -0.3		-1.0
Unemployment (2015)	-0.3 – -0.5		-1.8
Unemployment (2016+17Q1)			
Unemployment (cumulative)	-0.4 – -0.8		-2.8

The FX commitment helped to avoid **deflation** and deep **recession**.

Core and headline inflation returned close to the target in 2017-2018, enabling to withdraw easy monetary policy.

Counterfactual analyses suggest **positive real effects**.

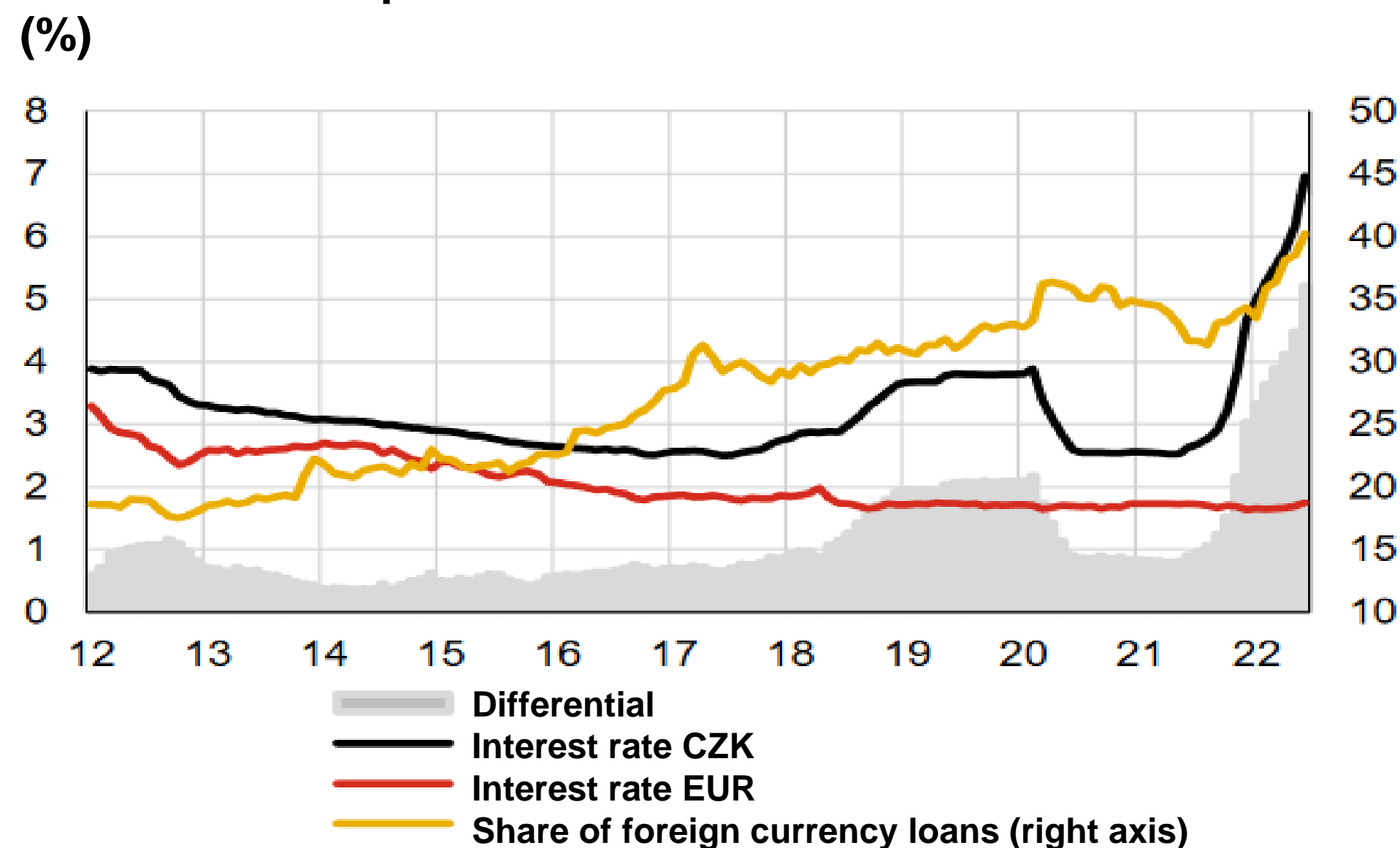
Current debates about transmission



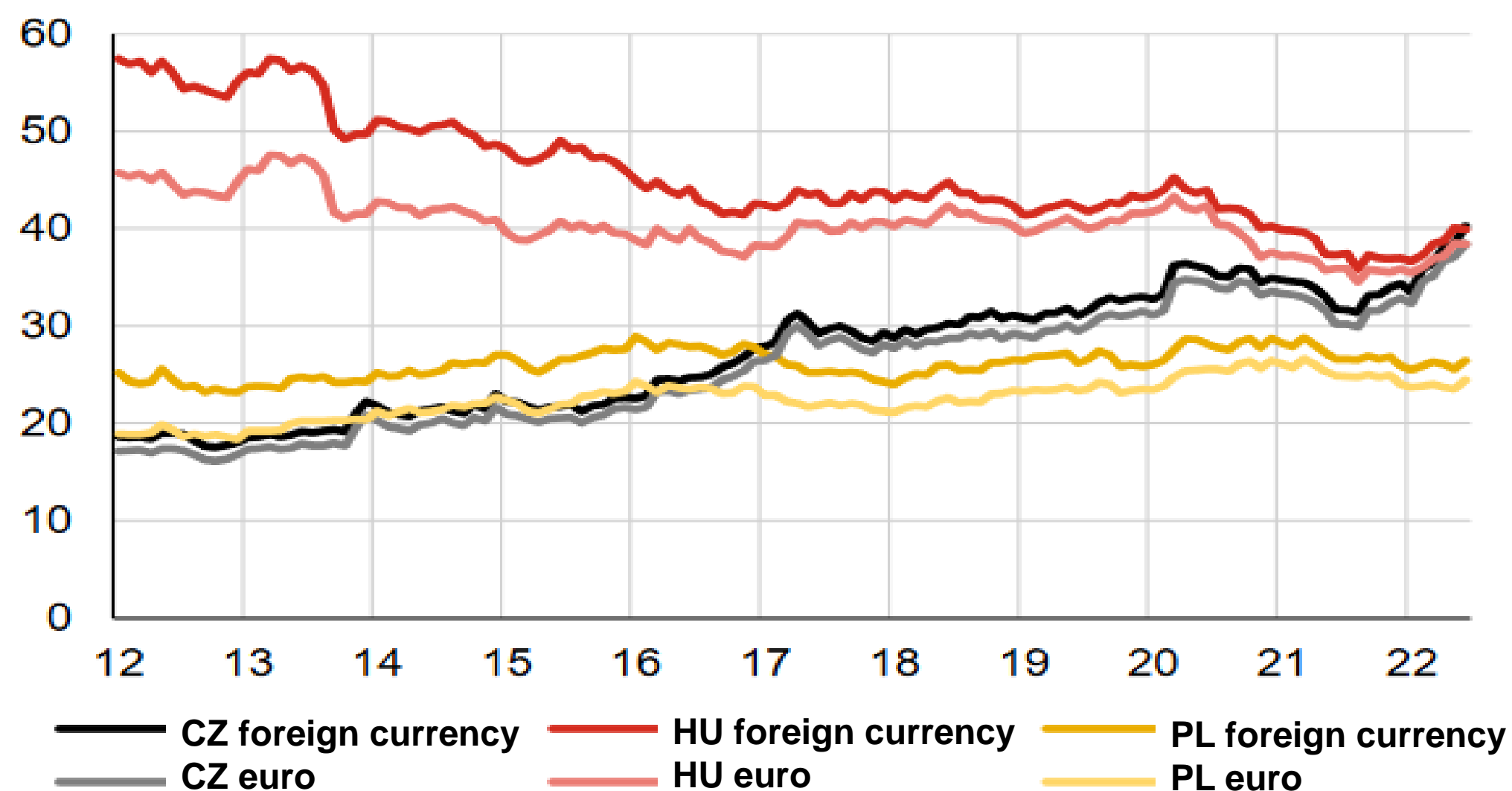
CNB started to **hike policy rates in June 2021** as one of the first central banks after the Covid. However, despite a **rising interest rate differential**, no strong appreciation of the koruna has taken place, unlike in the past.

Euroization of loans to non-financial corporations

Interest rate on koruna and euro loans of Czech nonfinancial corporations (%)



Foreign currency loans to nonfinancial corporations (shares on total loans from domestic commercial banks in %)



The high interest differential motivates Czech firms to take euro loans. In the past, the share grew partly as a "natural exchange rate hedge" of exporting firms with euro revenues.

Euroization of loans **reduces the effectiveness of transmission** and may represent a source of **risk for financial stability**.

Thank you for your attention

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