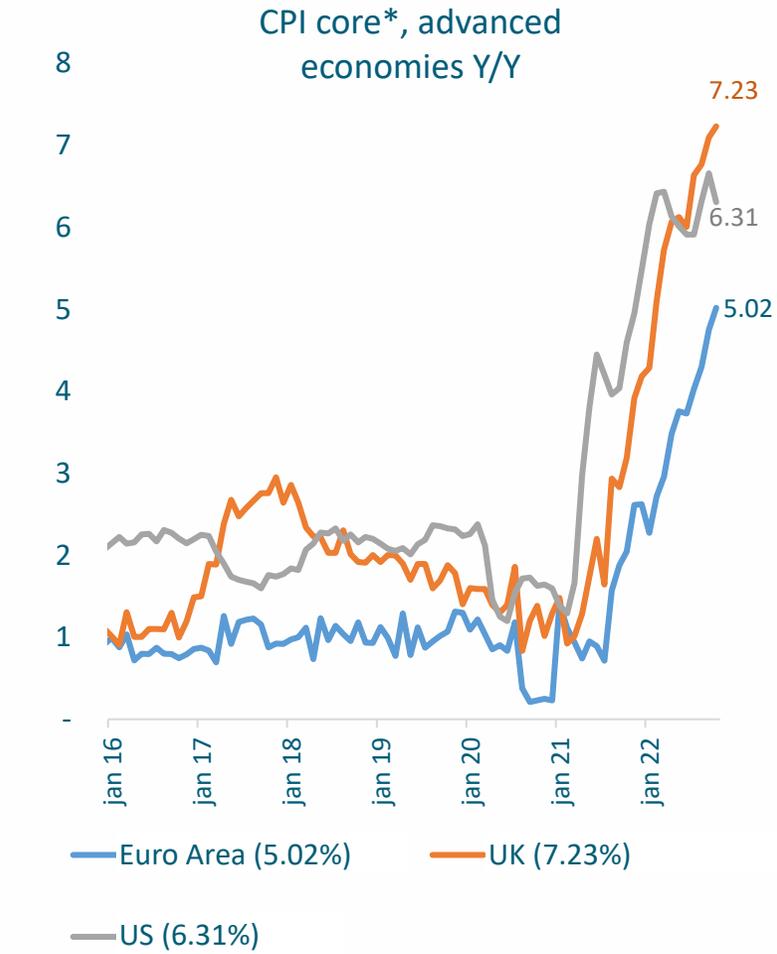# Brazil Opportunities Conference
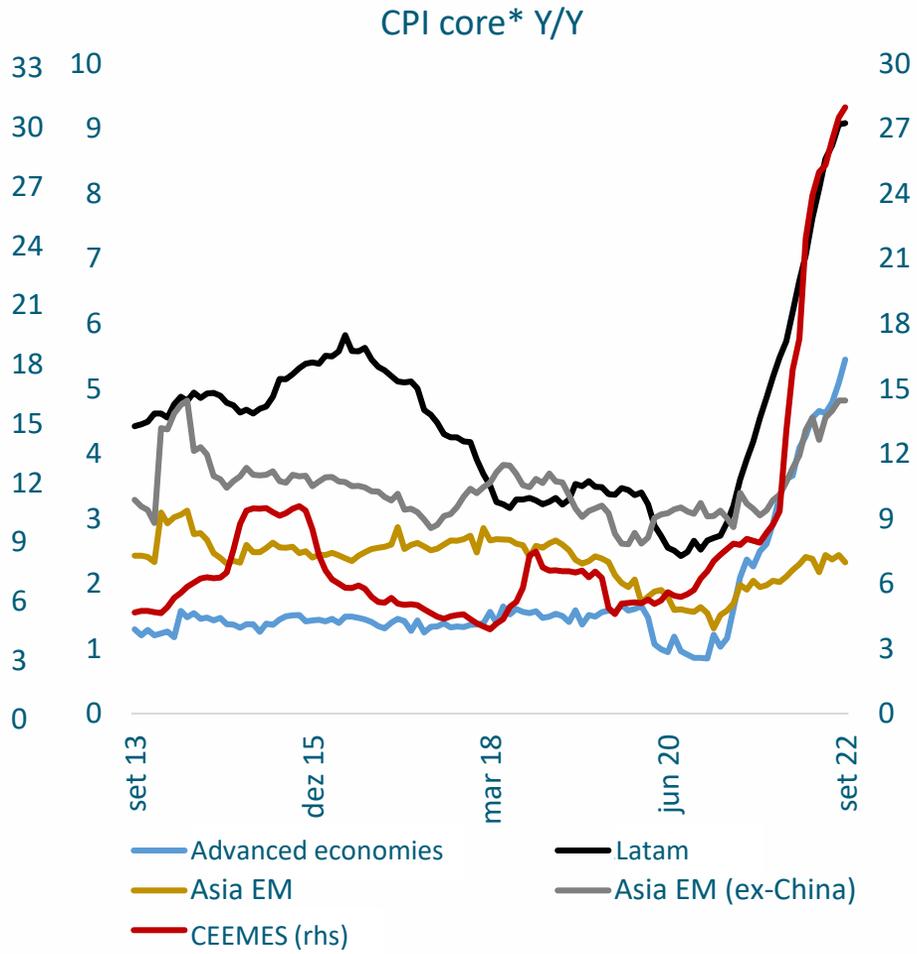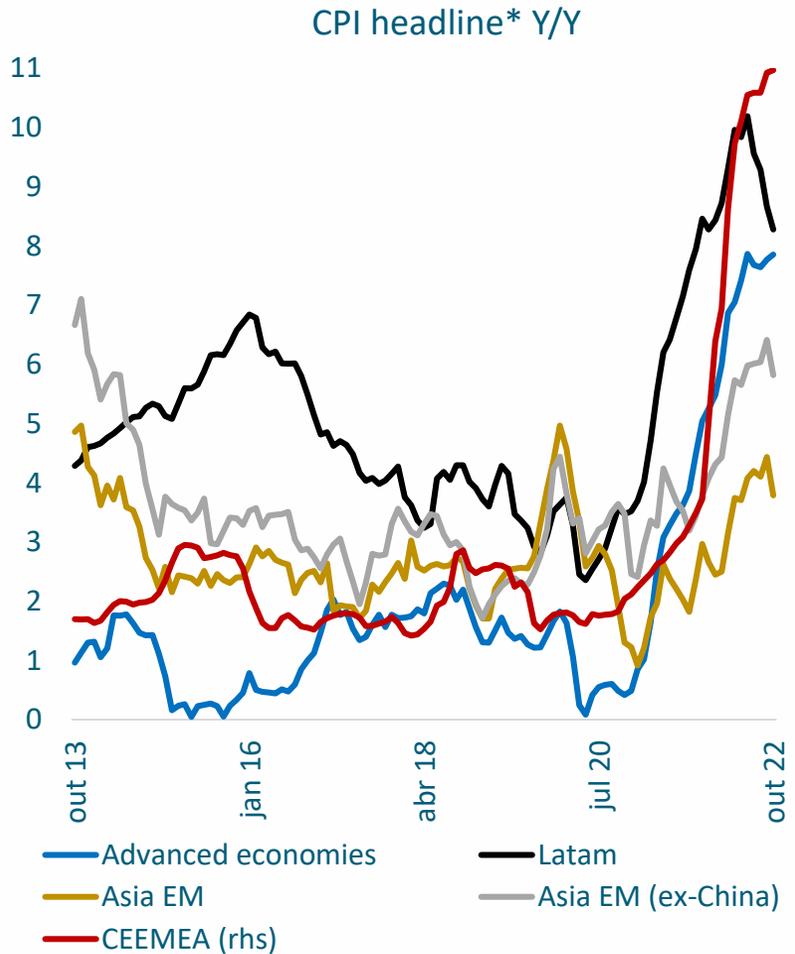
Banco Central do Brasil

Diogo Guillén – Deputy Governor of Economic Policy

November 29th, 2022

Global outlook

Inflationary environment remains pressured

CPI headline* Y/Y

CPI core* Y/Y

CPI core*, advanced economies Y/Y

Advanced economies
Asia EM
CEEMEA (rhs)
Latam
Asia EM (ex-China)

Advanced economies
Asia EM
CEEMES (rhs)
Latam
Asia EM (ex-China)

Euro Area (5.02%)
US (6.31%)
UK (7.23%)

* Weighted by PPP; Latam: BRA, MEX, CHL, COL, PER;   CEEMEA: ZAF, TUR, RUS, BGR, CZE, HUN, POL, ROU, SVK;
Asia EM: CHN, IDN, IND, KOR, HKG, MYS, PHL, SGP, TWN, THA;
Advanced economies: DEU, FRA, GBR, ITA, GRC, PRT, IRL, ESP, CHE, NOR, SWE, DNK, FIN, CAN, USA, JPN
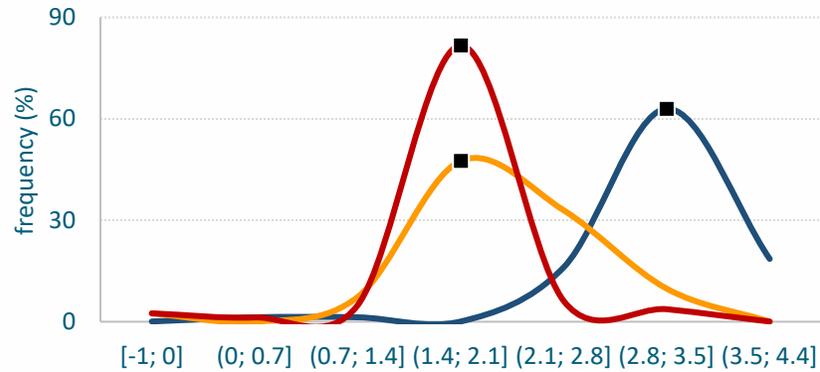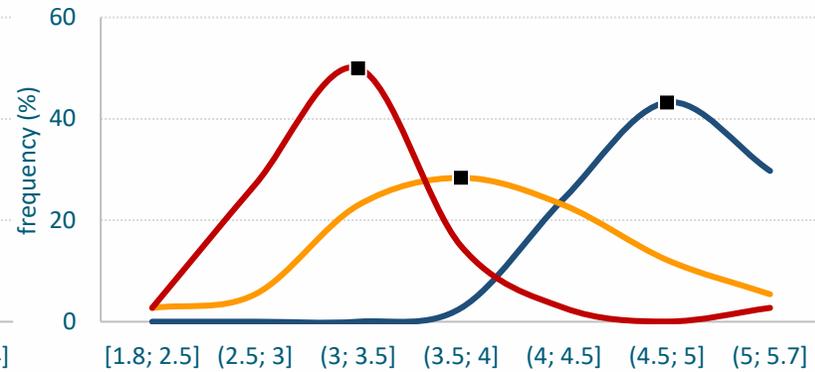
BANCO CENTRAL DO BRASIL

3

Deterioration of expectations
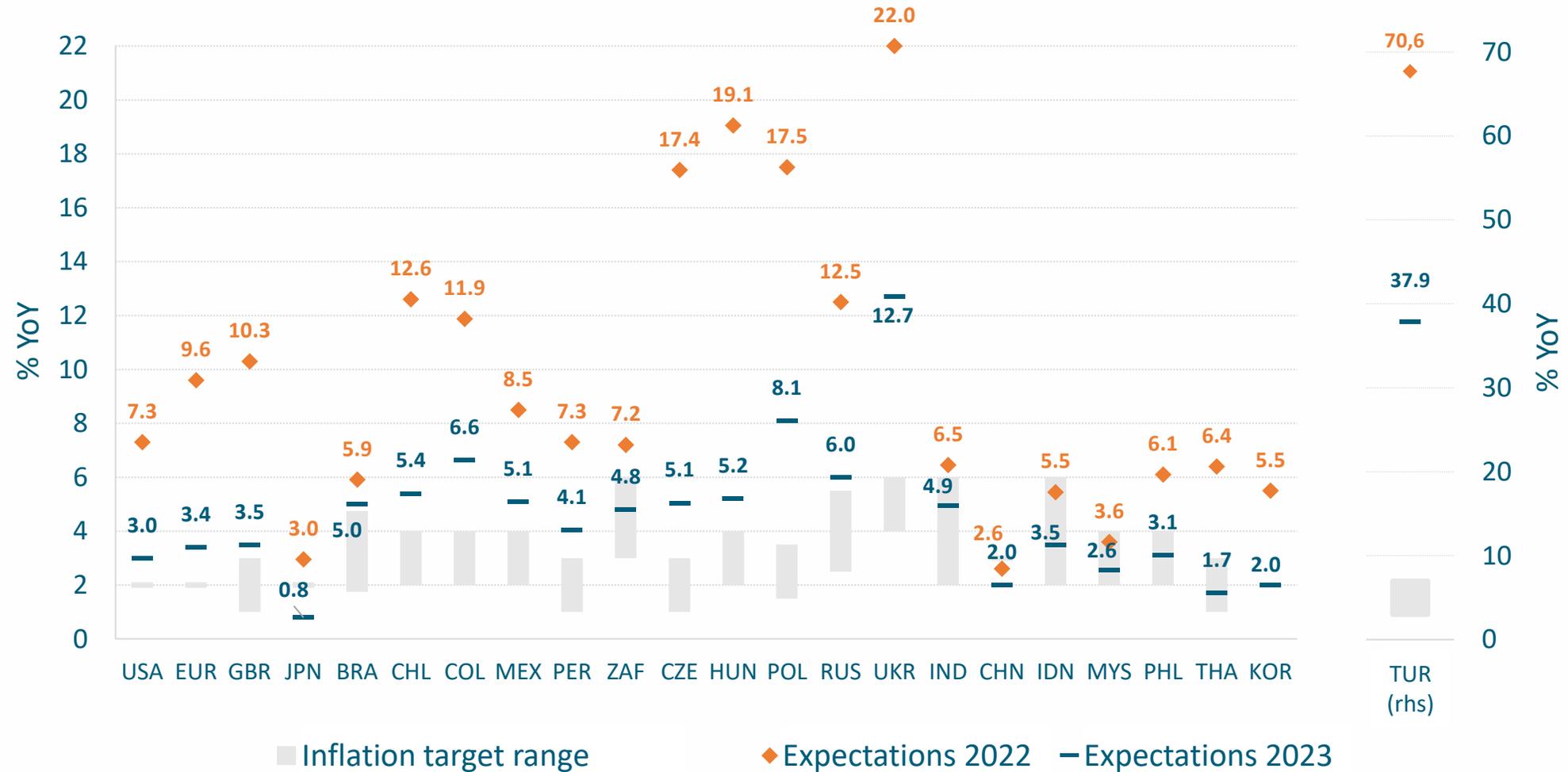
Sources: Bloomberg and surveys of central banks

GDP growth expectations

GDP USA 2022

frequency (%)

[-1; 0] (0; 0.7] (0.7; 1.4] (1.4; 2.1] (2.1; 2.8] (2.8; 3.5] (3.5; 4.4]

GDP China 2022

frequency (%)

[1.8; 2.5] (2.5; 3] (3; 3.5] (3.5; 4] (4; 4.5] (4.5; 5] (5; 5.7]

GDP Euro Area 2022

frequency (%)

[2; 2.3] (2.3; 2.6] (2.6; 2.9] (2.9; 3.2] (3.2; 3.5] (3.5; 3.8] (3.8; 4.7]

GDP USA 2023

frequency (%)

[-1.2; -0.6] (-0.6; 0.1] (0.1; 0.8] (0.8; 1.5] (1.5; 2.2] (2.2; 2.9] (2.9; 3.7]

GDP China 2023

frequency (%)

[2.2; 3.4] (3.4; 4] (4; 4.6] (4.6; 5.2] (5.2; 5.8] (5.8; 6.4] (6.4; 7]

GDP Euro Area 2023

frequency (%)

[-2.2; -1.1] (-1.1; -0.3] (-0.3; 0.5] (0.5; 1.3] (1.3; 2.1] (2.1; 2.9] (2.9; 3.4]
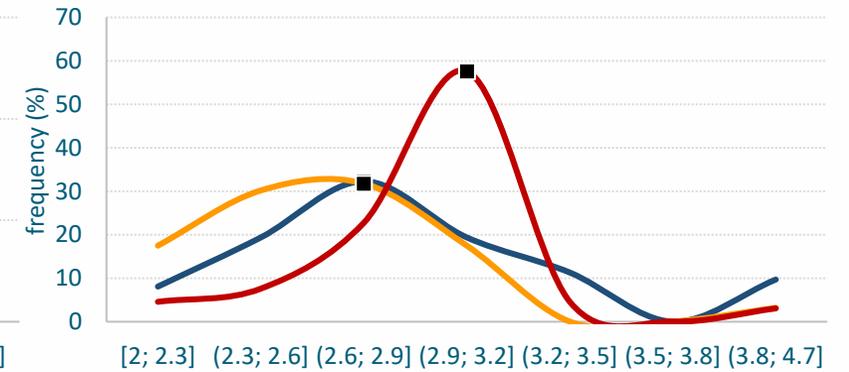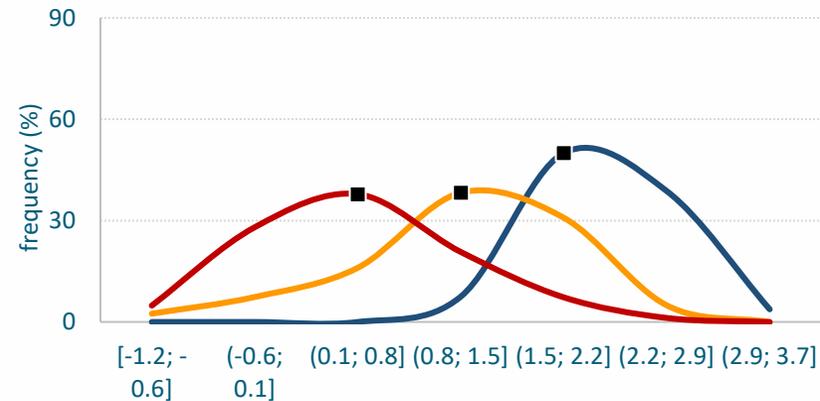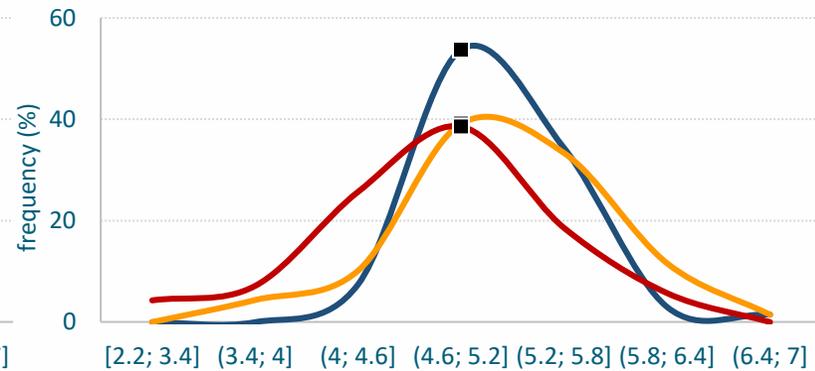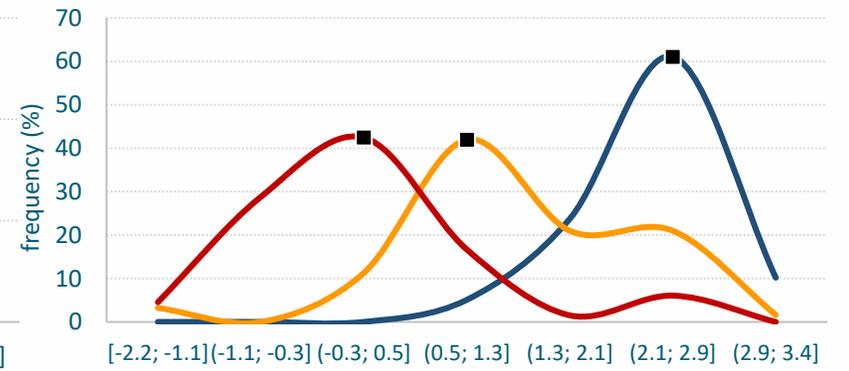
—— March 2022   —— June 2022   —— September 2022   ■ median

Source: Bloomberg

BANCO CENTRAL DO BRASIL

5

Normalization of monetary policy

10-year interest rate in advanced economies

change since March 21 (p.p.)

USA
GBR
Euro

JPN

— USA +2.29   — Euro area +2.11
— GBR +2.21   — Japan +0.09

Sources: Bloomberg and central banks

Interest rates in emerging markets

change since March 21 (p.p.)

UKR
HUN
BRA
CHL
COL
PER
CZE
POL
MEX
RUS
ZAF
PHL
IDN
IND
MYS
THA
TUR

— BRA +11.75   — COL +9.25   — MEX +6   — RUS +3.25   — ZAF +3.5
— PHL +3   — IND +1.9   — IDN +1.75   — CHL +10.75 — CZE +6.75
— HUN +17.4   — KOR +2.75   — MYS +1   — PER +7   — UKR +19
— TUR +-8   — THA +0.5   — POL +6.65
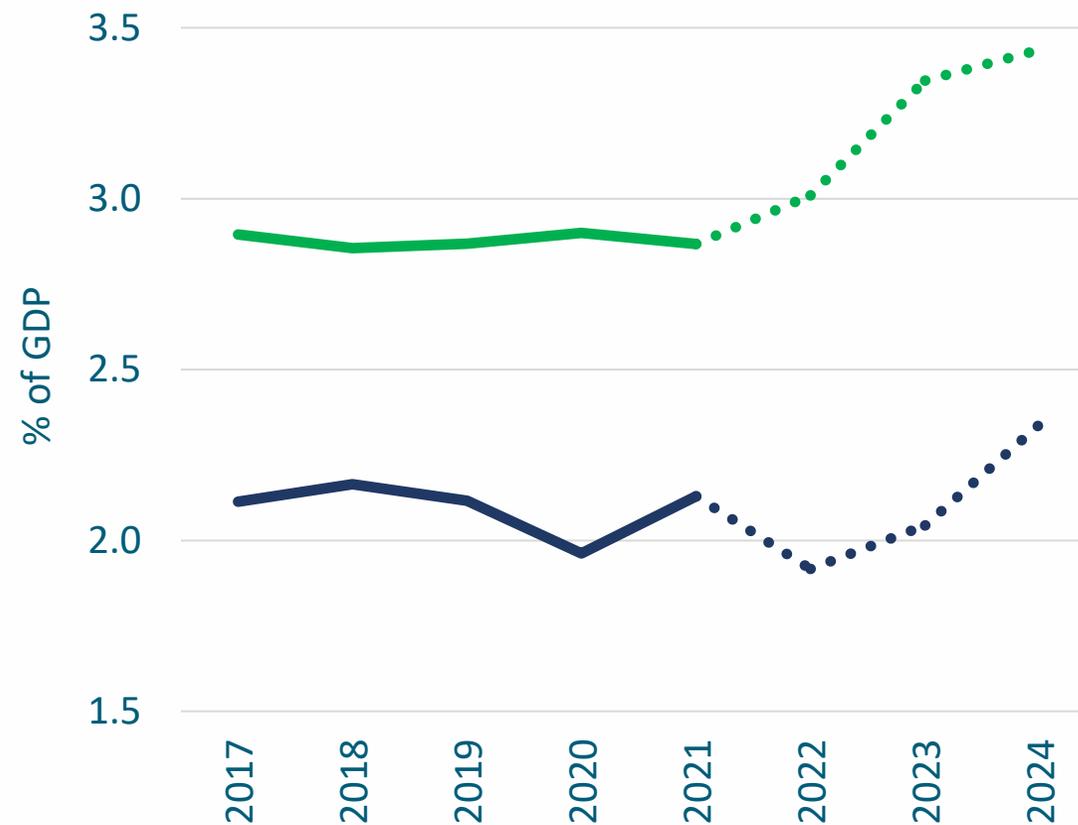
Cost of public debt

National gross public debt
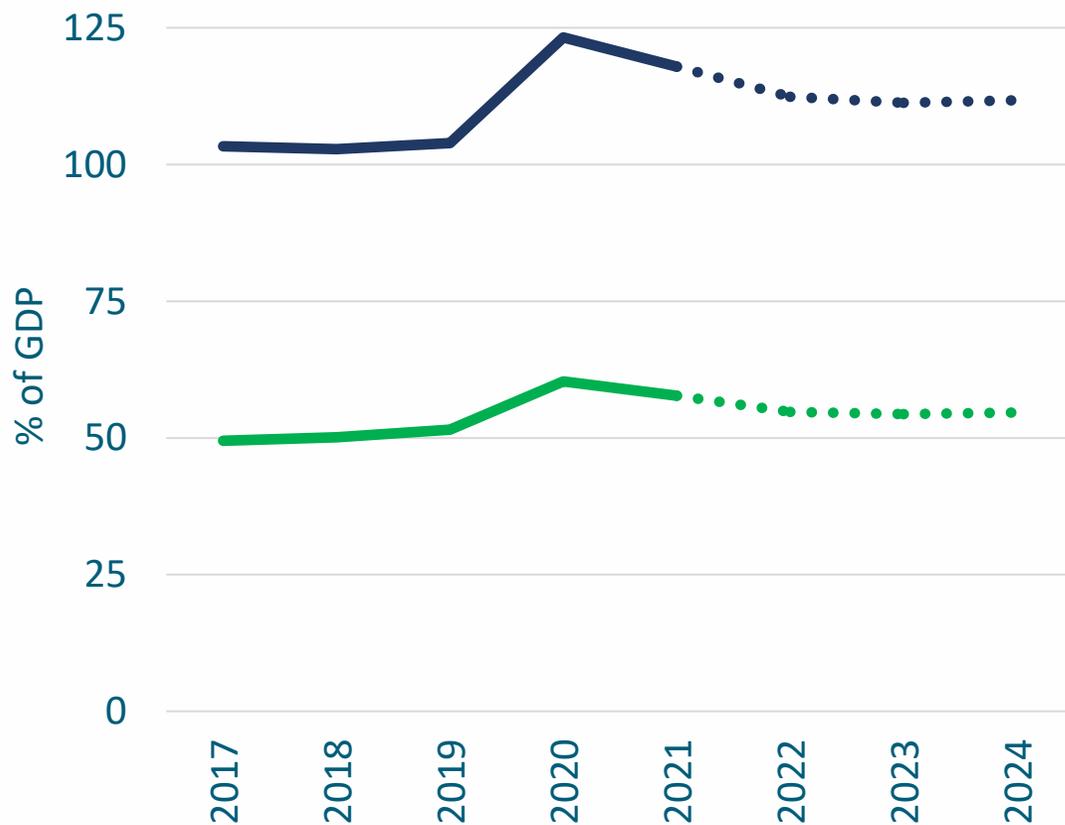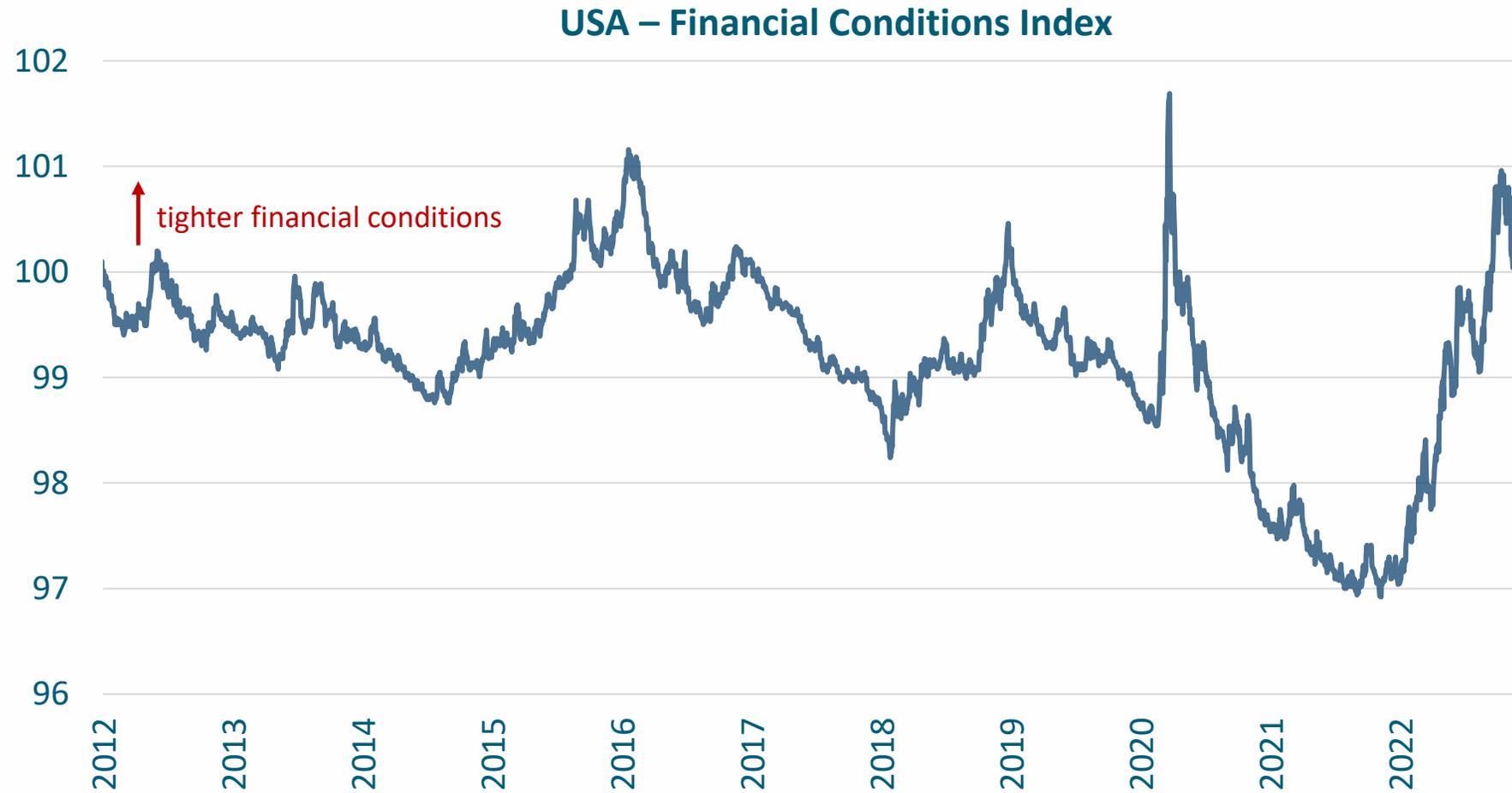

Interest expense of public debt

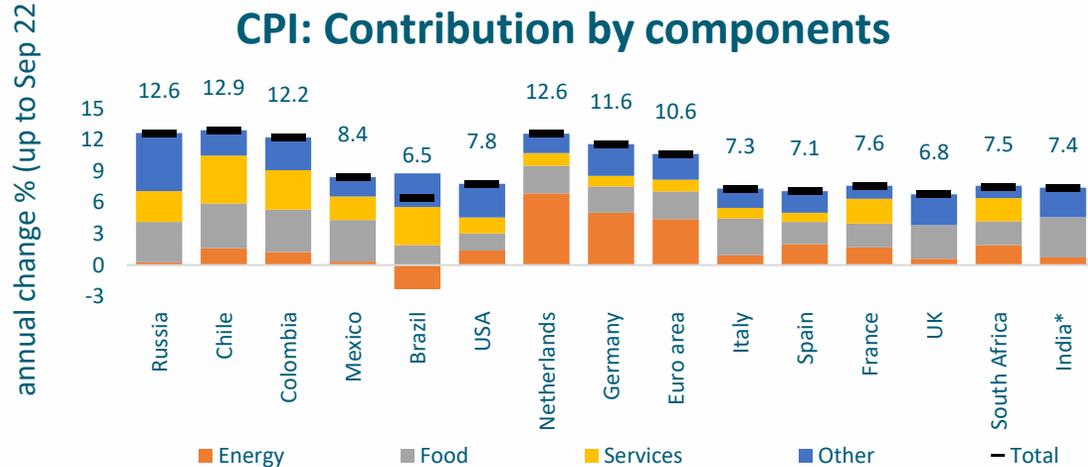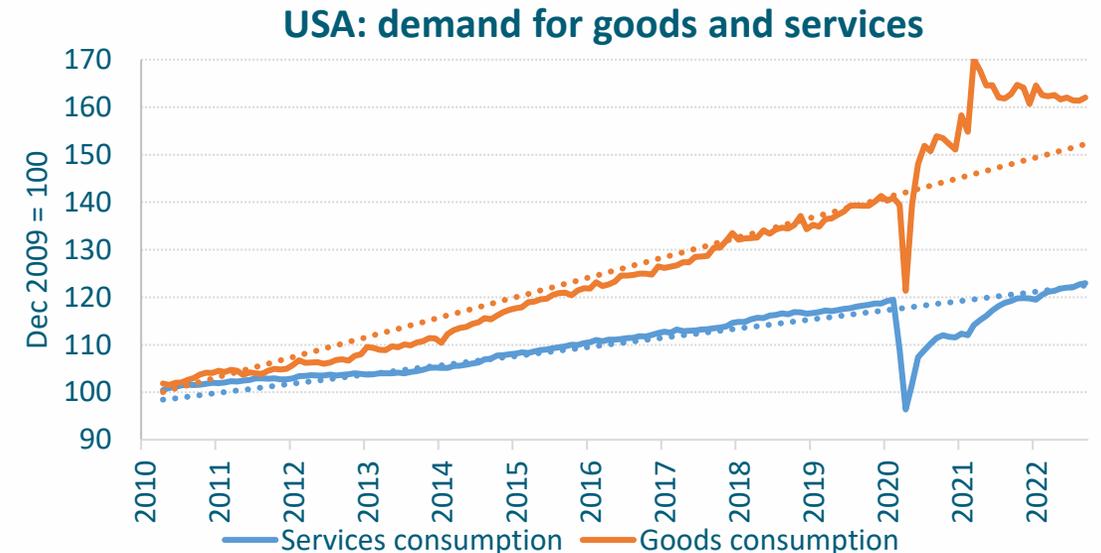— Emerging market and developing economies (China is excluded)   — Advanced economies

Source: IMF

Tightening of financial conditions

USA – Financial Conditions Index

tighter financial conditions

Source: Goldman Sachs

Normalization of prices of goods versus prices of services

Global Supply Chain Pressure Index

Dec 21
4.30

Apr 22
3.42

Oct 22
1.0

Sep 22
0.89

USA: demand for goods and services
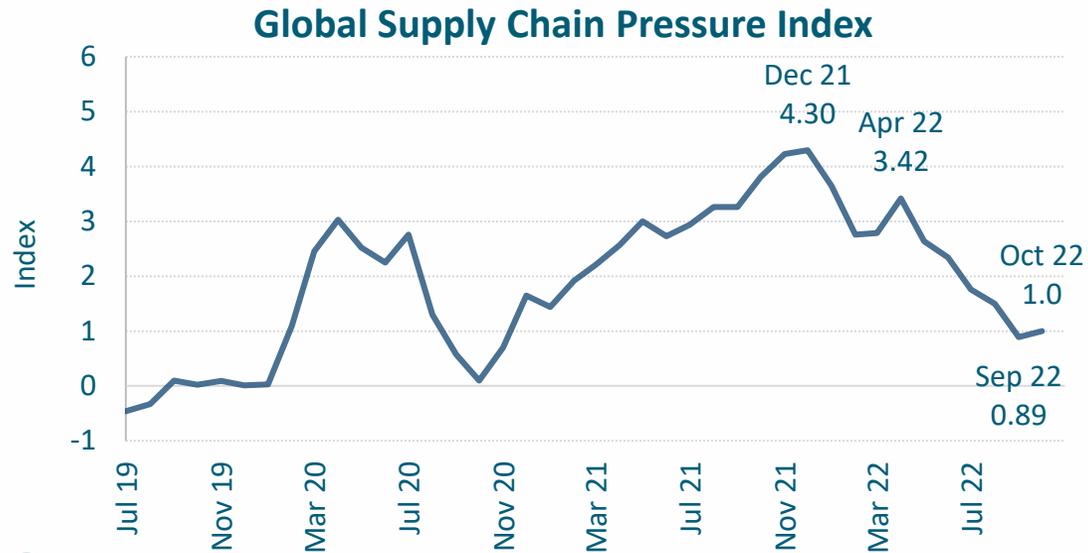
Dotted lines refer to the extrapolation of trend lines (Jan 2010 to Feb 2020)

CPI: Contribution by components

Russia 12.6 | Chile 12.9 | Colombia 12.2 | Mexico 8.4 | Brazil 6.5 | USA 7.8 | Netherlands 12.6 | Germany 11.6 | Euro area 10.6 | Italy 7.3 | Spain 7.1 | France 7.6 | UK 6.8 | South Africa 7.5 | India* 7.4

■ Energy ■ Food ■ Services ■ Other — Total

USA: CPI core (contribution)

■ Goods (core) ■ Services (core) — CPI (core)
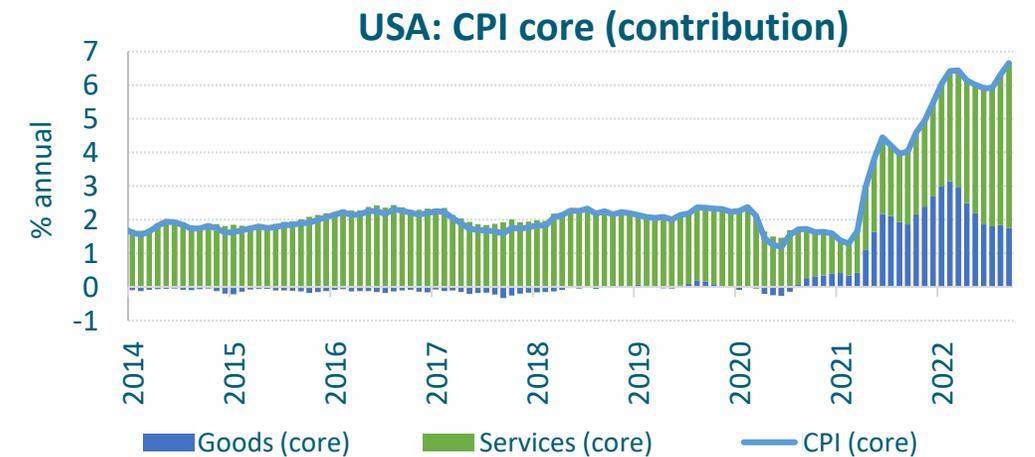
Sources: Federal Reserve (GSCPI) and Bloomberg

BANCO CENTRAL DO BRASIL

9

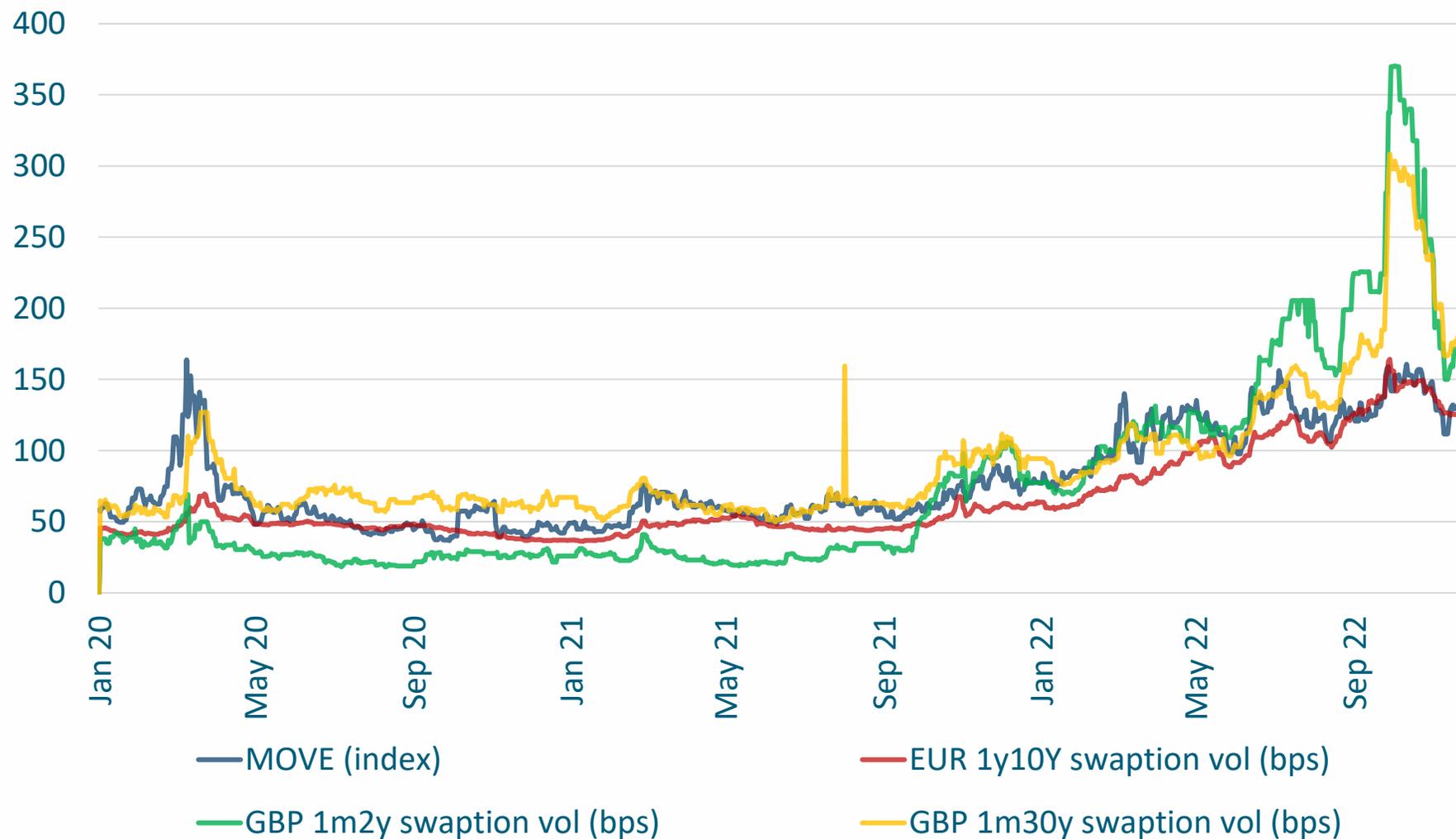# Monetary policy lag – Risks of backward-looking policies

Monetary policy lag: impact on the price level

Percentage relative to valley shown in the Impulse-Response Functions (FRI) of each paper

	papers	1st quarter	2nd quarter	4th quarter	6th quarter	12th quarter
By country:						
Advanced economies	14	26%	35%	40%	57%	82%
Emerging markets	9	29%	46%	56%	59%	67%
By type:						
Recursive	7	29%	38%	41%	47%	78%
Non-recursive	15	32%	46%	51%	64%	75%
Total	**22**	**27%**	**39%**	**44%**	**57%**	**79%**

Note: Most of the data was taken from Havranek and Rusnak (2013). FRIs that present a "price puzzle" were disregarded. When more than one price level FRI is presented in the article, the average of them is considered. The total number of articles is less than the sum of the parts, because some articles appear in more than one category.
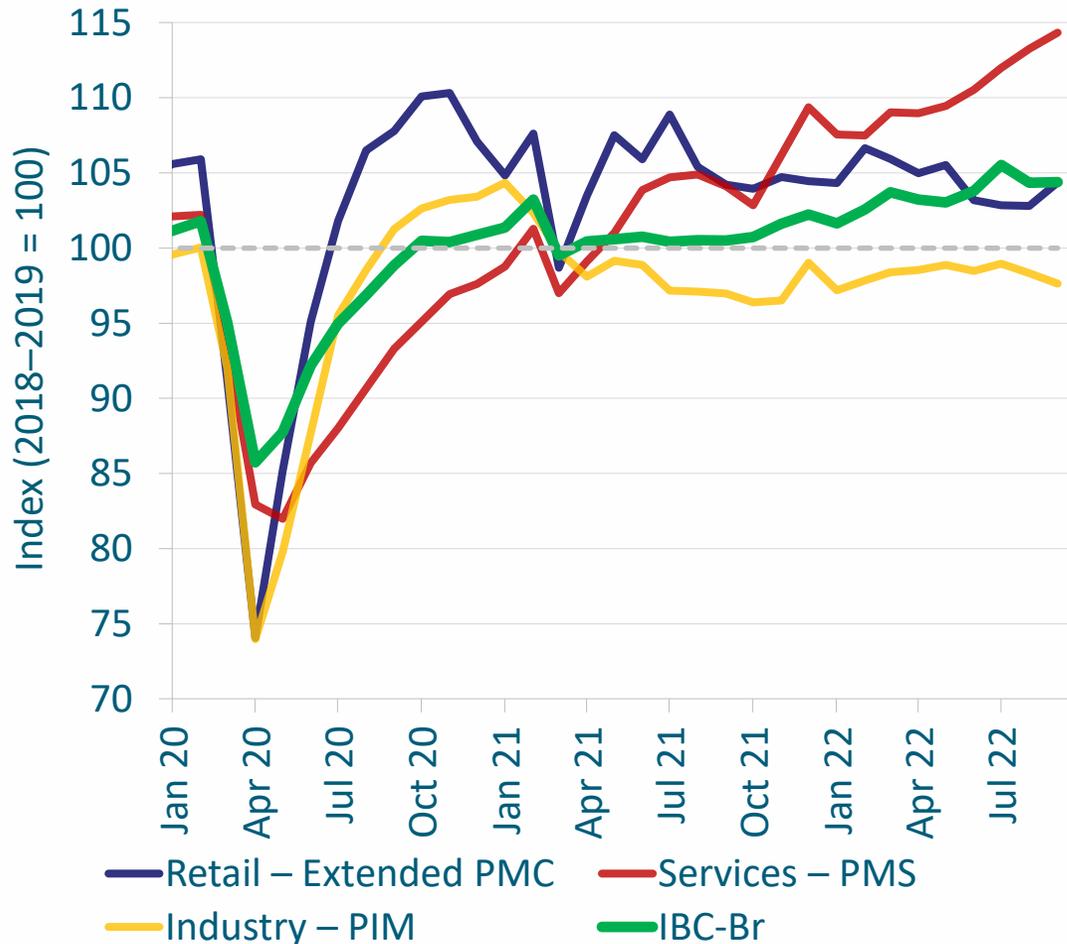
Volatility

Legend:
- MOVE (index)
- EUR 1y10Y swaption vol (bps)
- GBP 1m2y swaption vol (bps)
- GBP 1m30y swaption vol (bps)
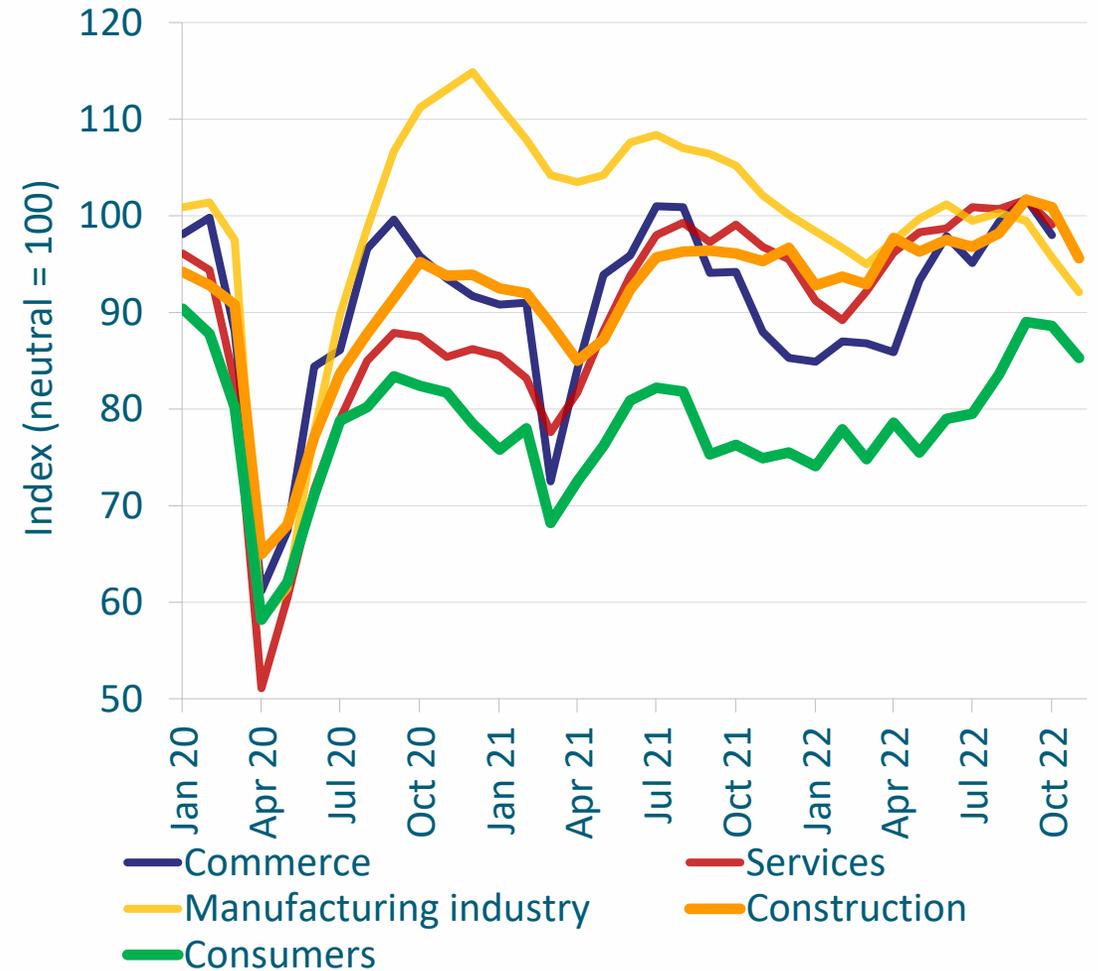
Source: Bloomberg
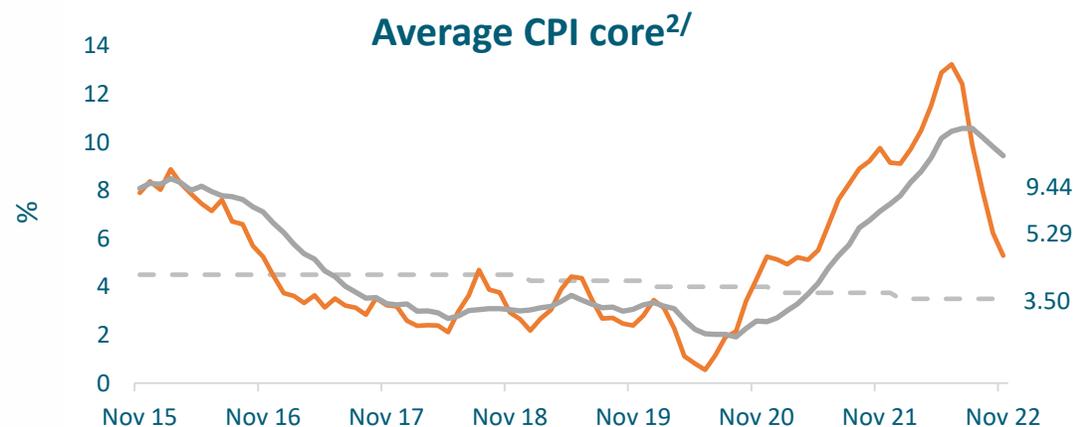
Economic activity

Economic activity data show some moderation

Economic activity

Confidence index
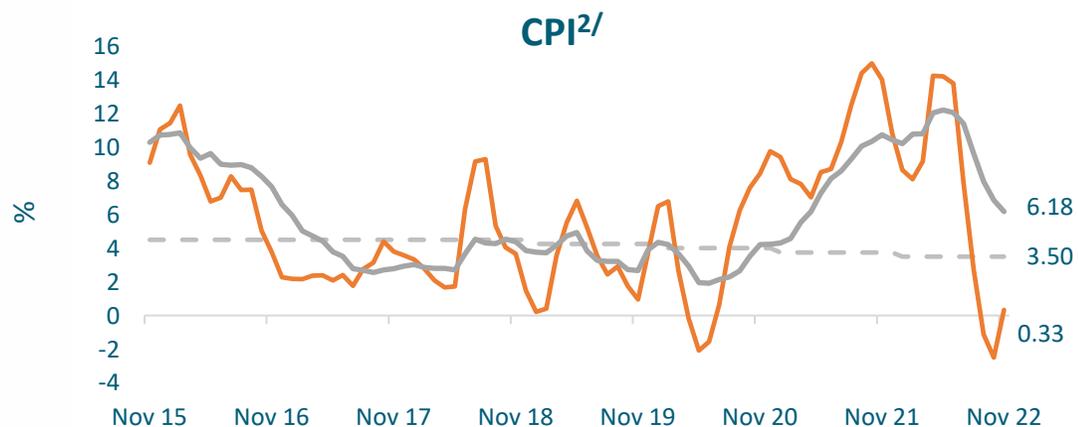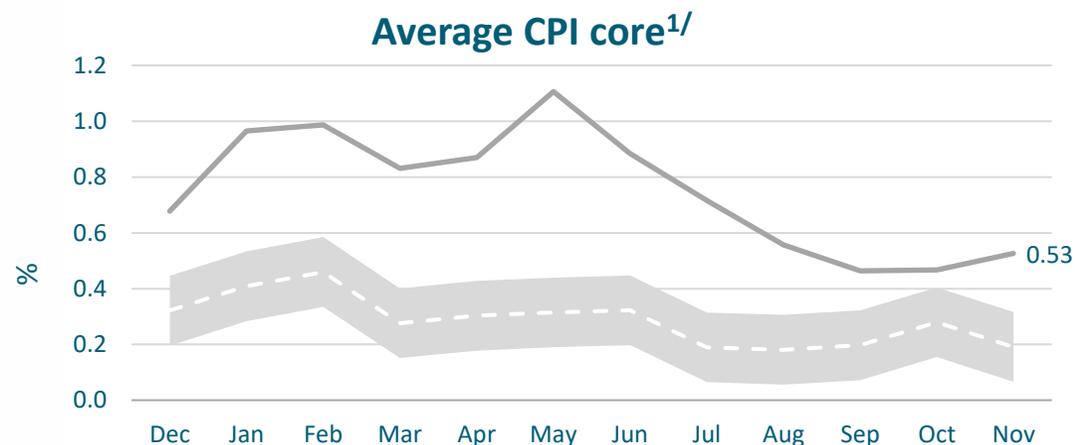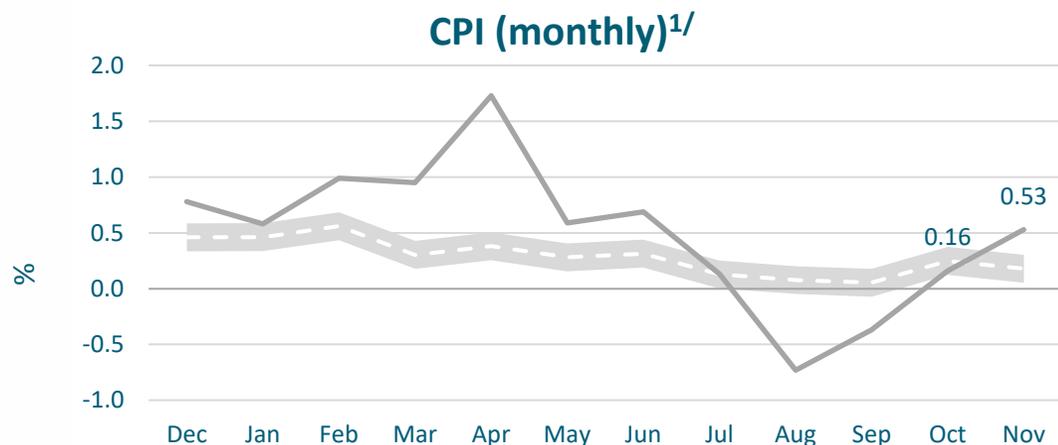
Sources: IBGE, BCB and FGV

Despite the recent drop concentrated on volatile items and those affected by tax measures, consumer inflation remains high

CPI (monthly)[1]

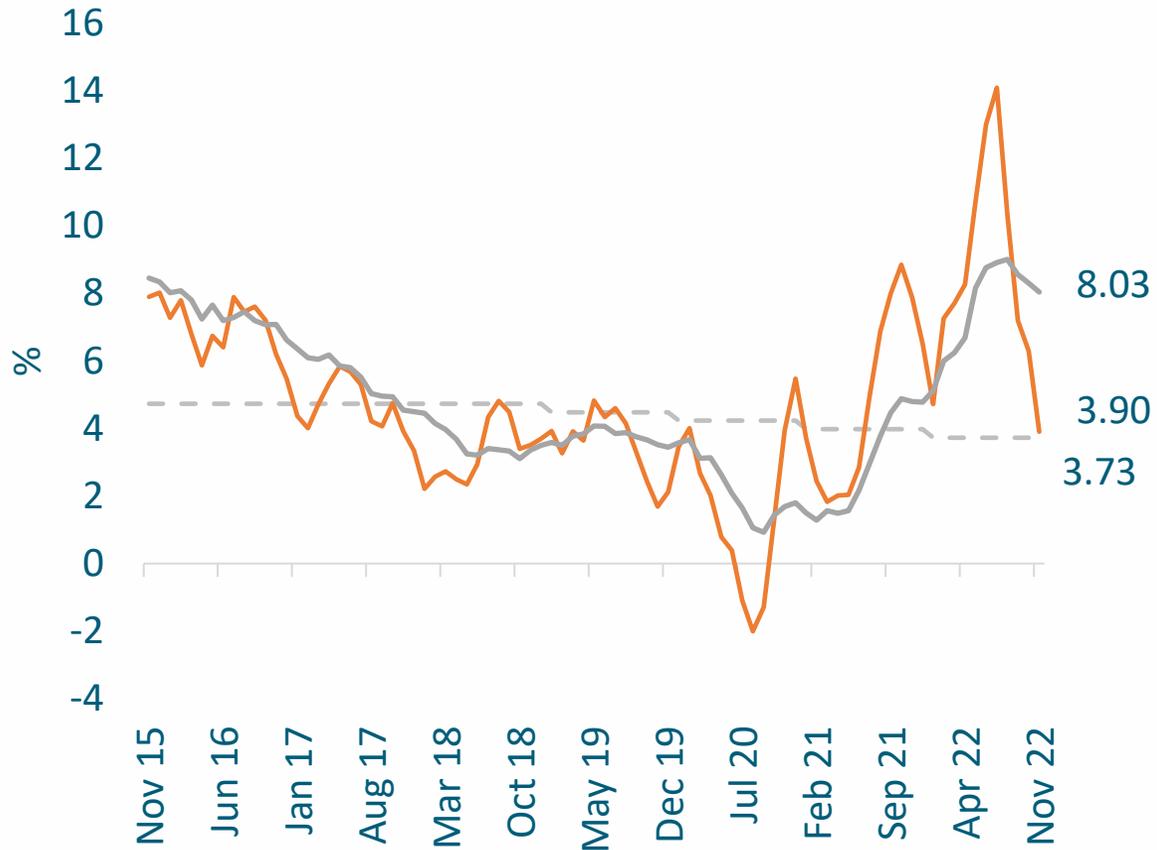### Average CPI core[1]

CPI[2]

Average CPI core[2]

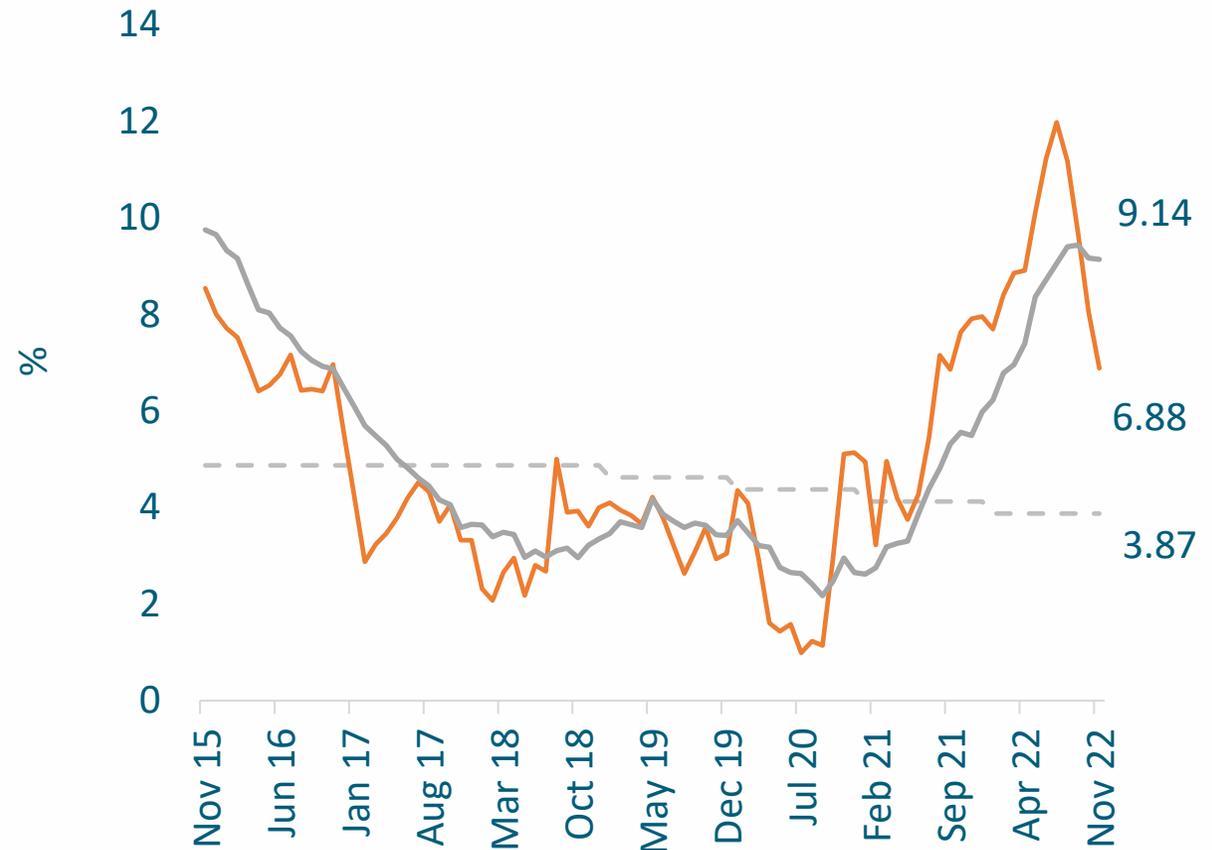1/ IPCA-15. Seasonally adjusted inflation target range (in gray).
2/IPCA-15. 12-month accumulated (gray) and 3-month accumulated annualized seasonally adjusted (orange).
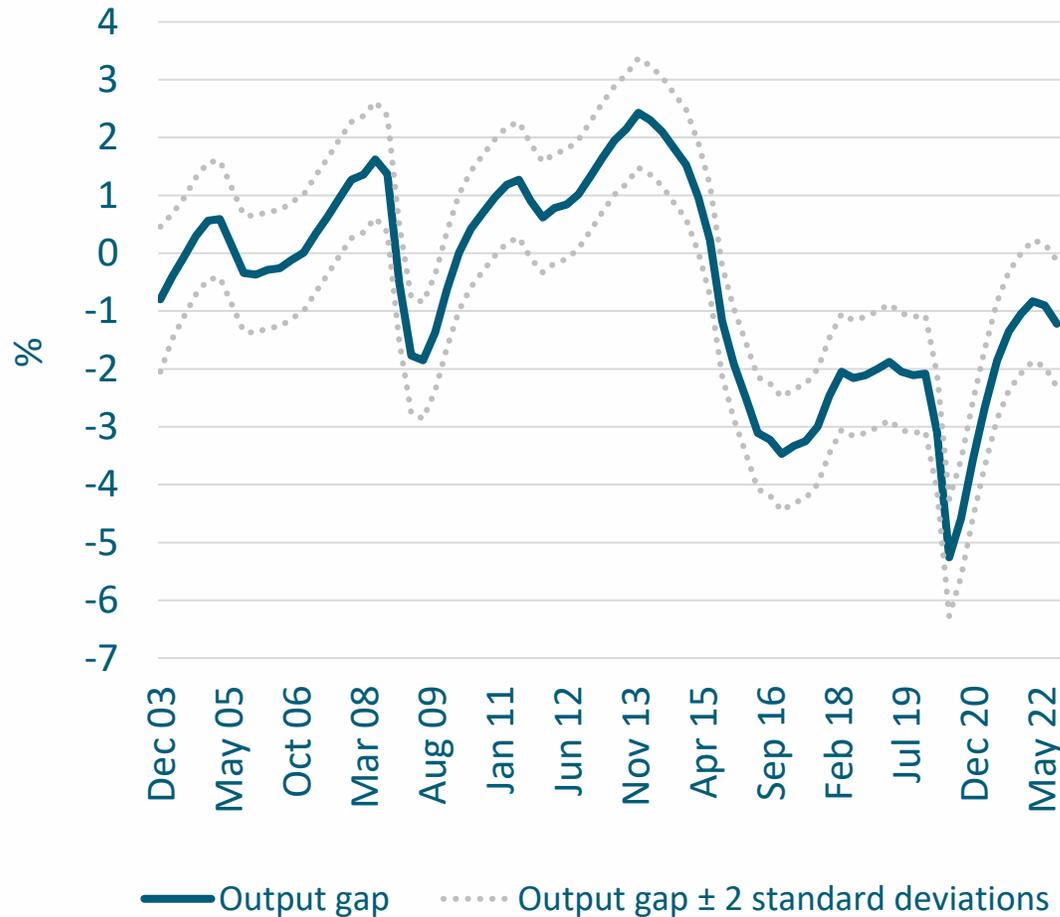
14

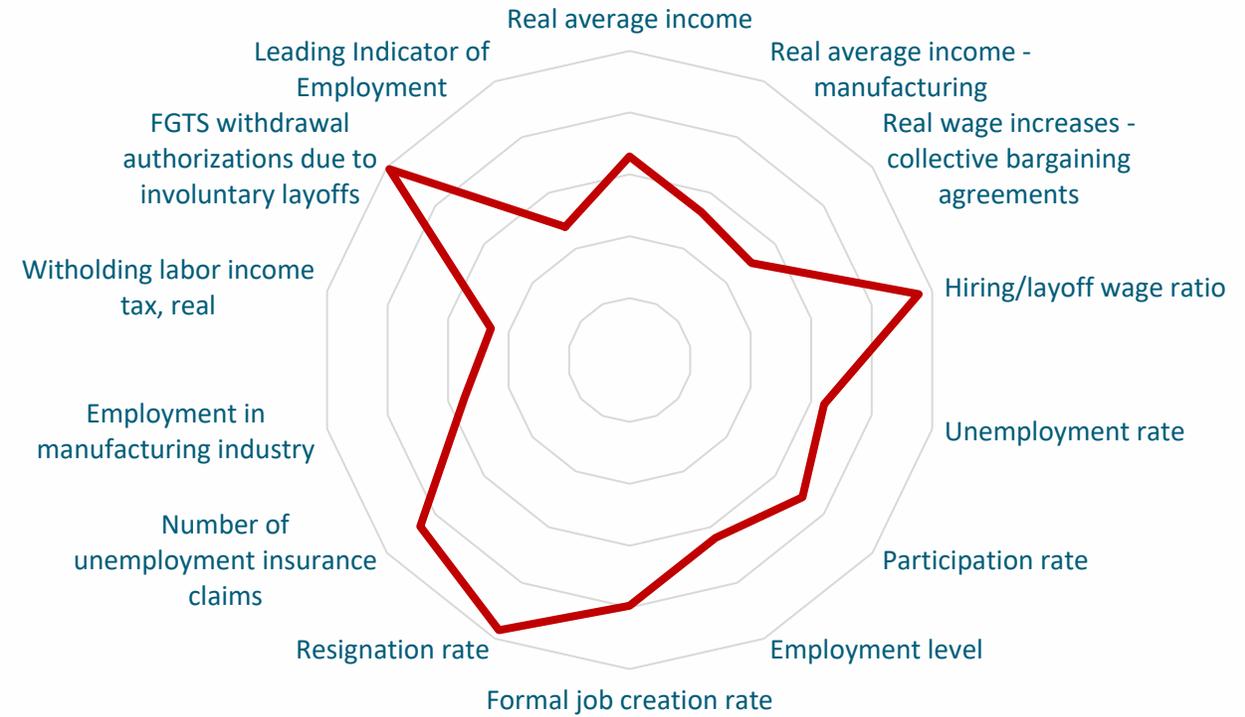# Services prices

Services[1]

Underlying services[1]

1/ IPCA-15. 12-month accumulated (gray) and seasonally adjusted 3-month accumulated (orange).

Uncertainty: non-observable – Output gap (variables and methods)

Estimated output gap[1]

Legend: Output gap — Output gap ± 2 standard deviations

Mixed signs in labor market

Radar chart labels: Real average income; Real average income - manufacturing; Real wage increases - collective bargaining agreements; Hiring/layoff wage ratio; Unemployment rate; Participation rate; Employment level; Formal job creation rate; Resignation rate; Number of unemployment insurance claims; Employment in manufacturing industry; Witholding labor income tax, real; FGTS withdrawal authorizations due to involuntary layoffs; Leading Indicator of Employment

1/ Estimate of the output gap published in the September 2022 Inflation Report.

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Uncertainty: in the parameters of monetary policy transmission – Change of mix and interest rate pass-through

Credit new operations
(households non-earmarked)

### Selic rate pass-through
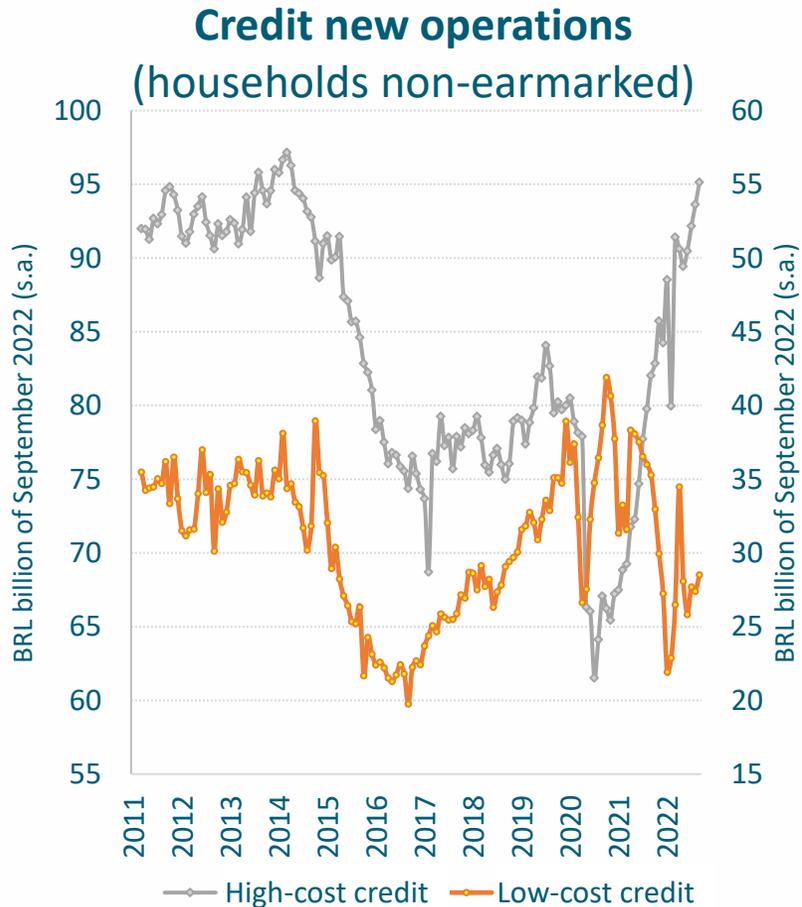
Financial flow

High cost: revolving and financing, Overdraft, personal credit (except payroll-deducted), goods financing and other non-earmarked credit loans.
Low cost: payroll-deducted credit, vehicles financing, leasing and discount of checks.
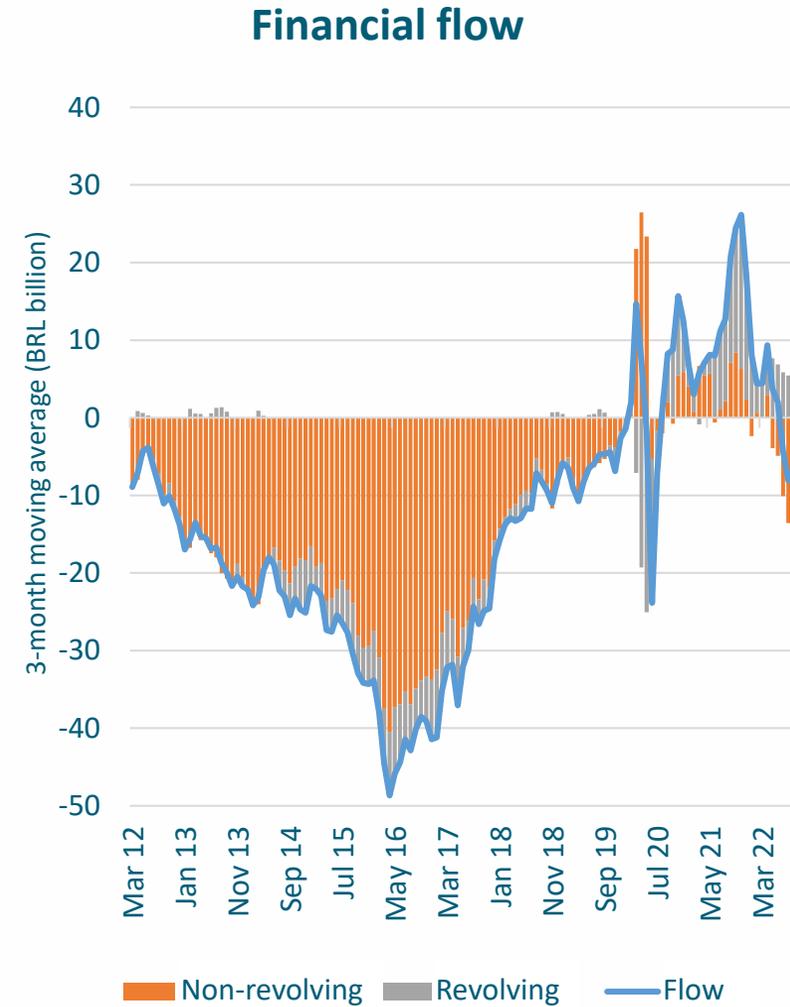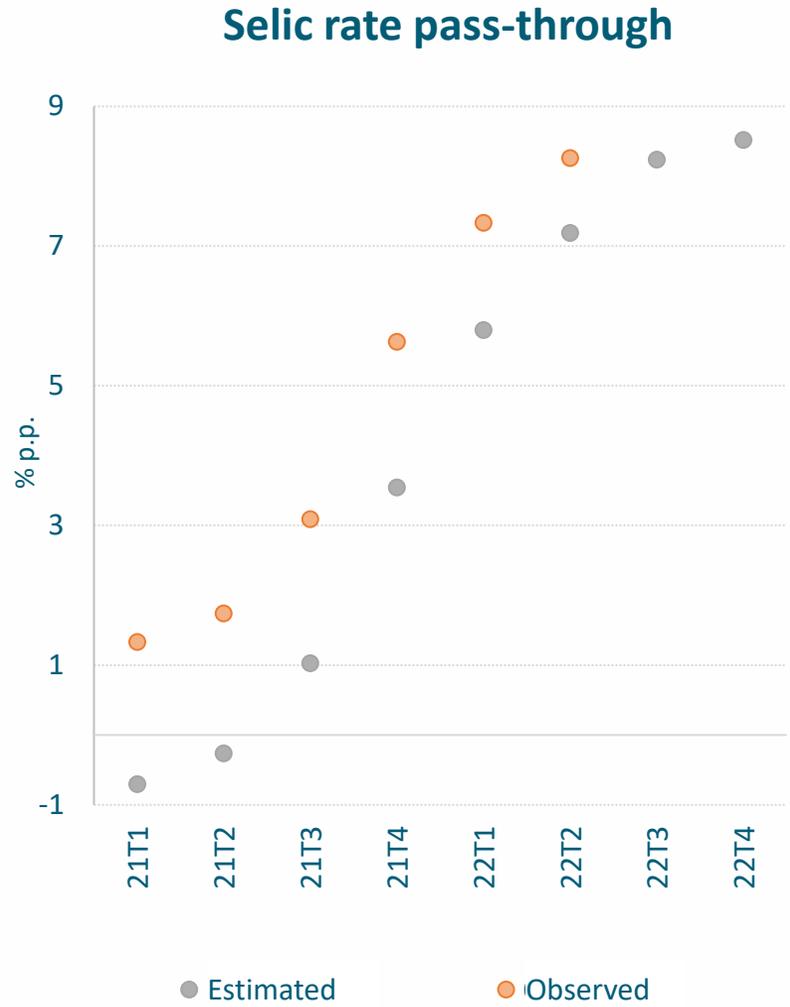
Financial Conditions Indicator

Financial Conditions Indicator (FCI)

FCI – Domestic and External factors
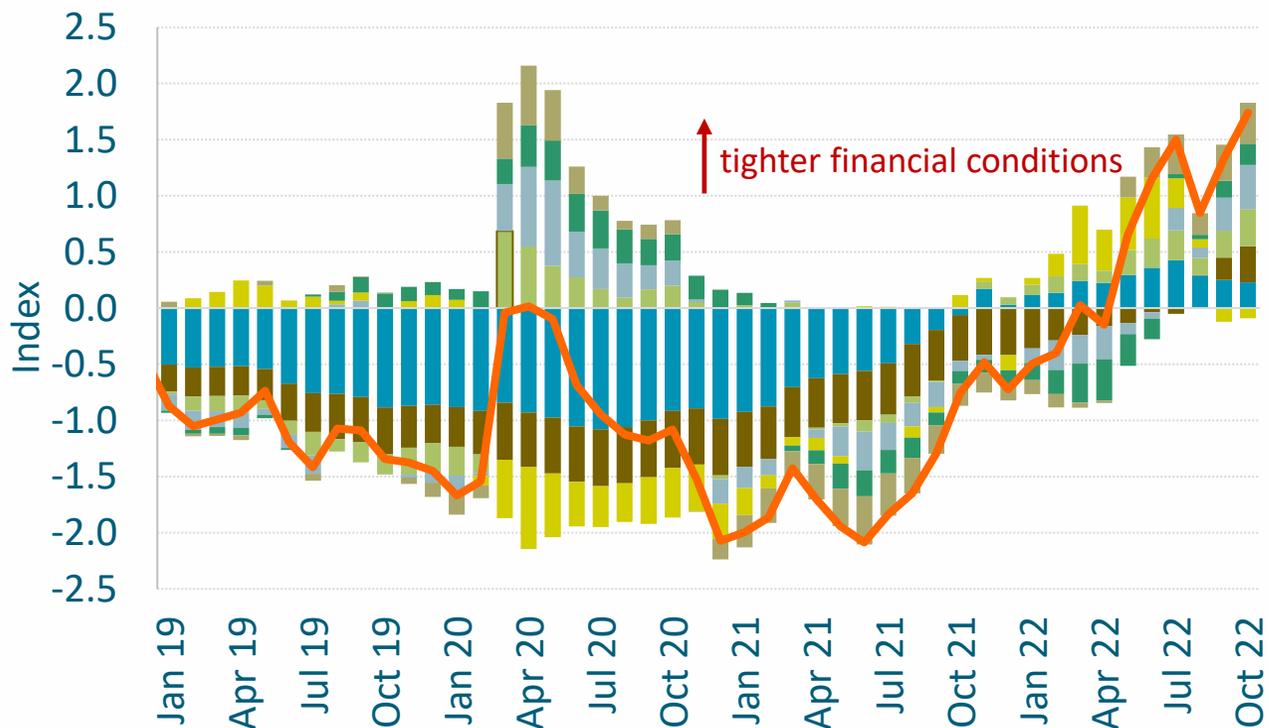
Legend:
- Domestic interest rates
- Foreign interest rates
- Risk
- Currencies
- Oil prices
- Commodity prices
- Capital markets
- FCI
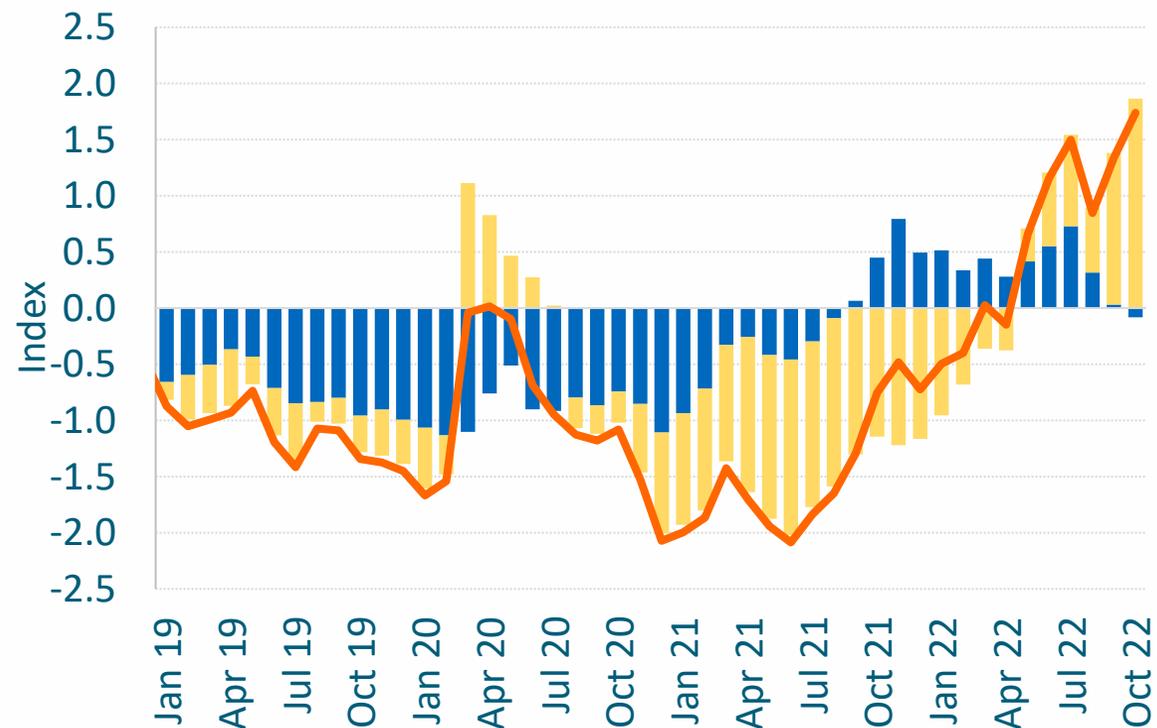
- Domestic factors
- External factors
- FCI

tighter financial conditions

Inflation expectations

Median market expectations (Focus)
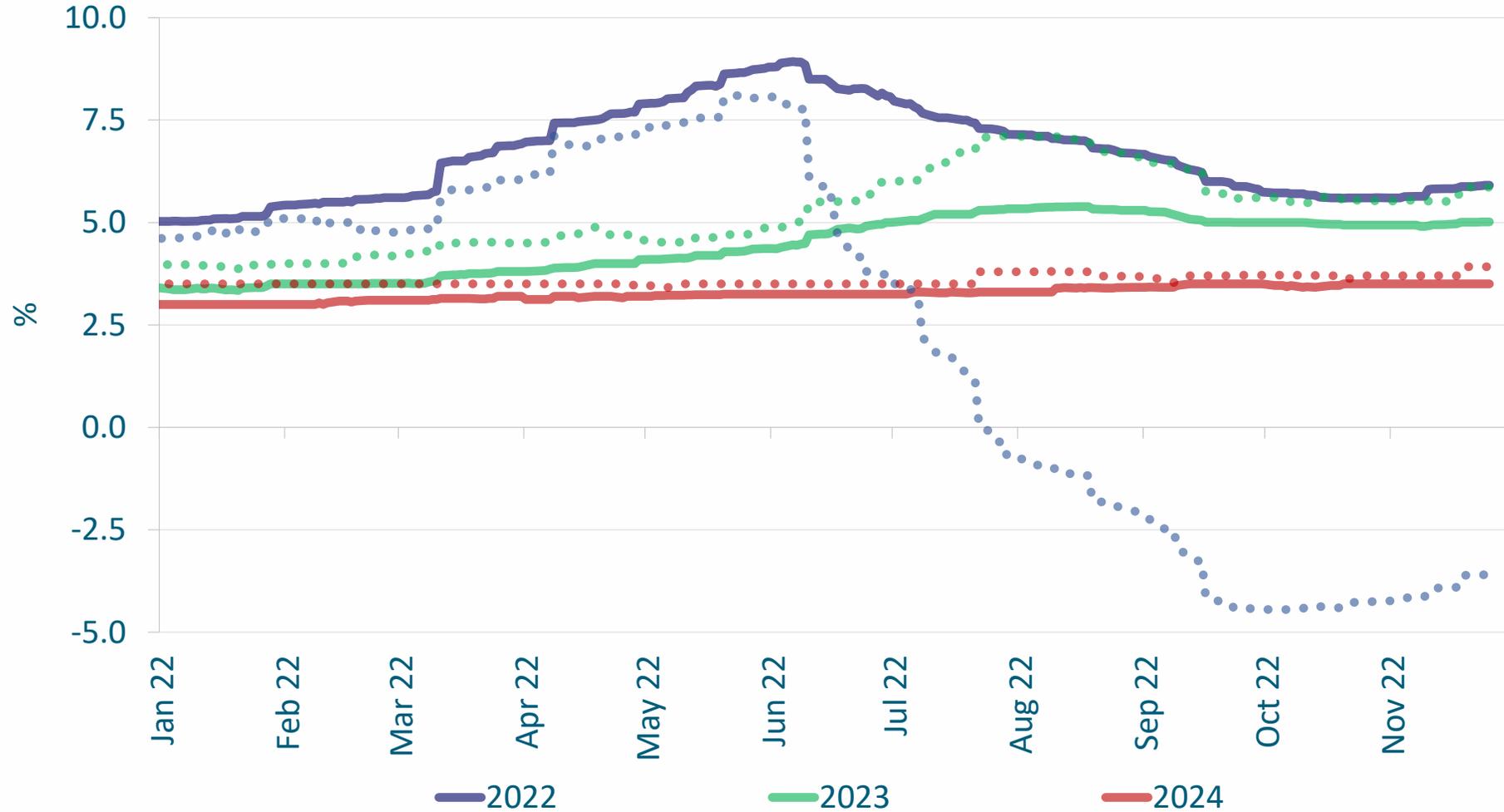
	IPCA	Adm.
2022	5.91%	-3.55%
2023	5.02%	5.86%
2024	3.50%	3.92%

Source: BCB (Focus)

Dotted lines refer to expectations for administered prices. Data up to November 25th

Final comments

Final comments – Projections

- In the reference scenario, Copom's inflation projections stand at 5.8% for 2022, 4.8% for 2023, and 2.9% for 2024.

- On the six-quarter-ahead horizon, which refers to the second quarter of 2024, the 12-month inflation projection stands at 3.2%.

- The Committee judges that the uncertainty in its assumptions and projections is higher than usual.

Final comments – Balance of Risks

Upside risks:

- greater persistence of global inflationary pressures;
- uncertainty about the country's future fiscal framework and additional fiscal stimuli that support aggregate demand, partially incorporated in inflation expectations and asset prices;
- An output gap tighter than the currently adopted by the Committee in its reference scenario, especially in the labor market.

Downside risks:

- an additional reduction in the prices of international commodities measured in local currency;
- greater-than-projected deceleration of global economic activity;
- continuity of tax cuts assumed to be reversed in 2023.

The Committee assesses that the still uncertain and volatile current scenario requires serenity when evaluating risks

Brazil Opportunities Conference

Banco Central do Brasil

Diogo Guillén – Deputy Governor of Economic Policy

November 29th, 2022