

Deutsche Bank

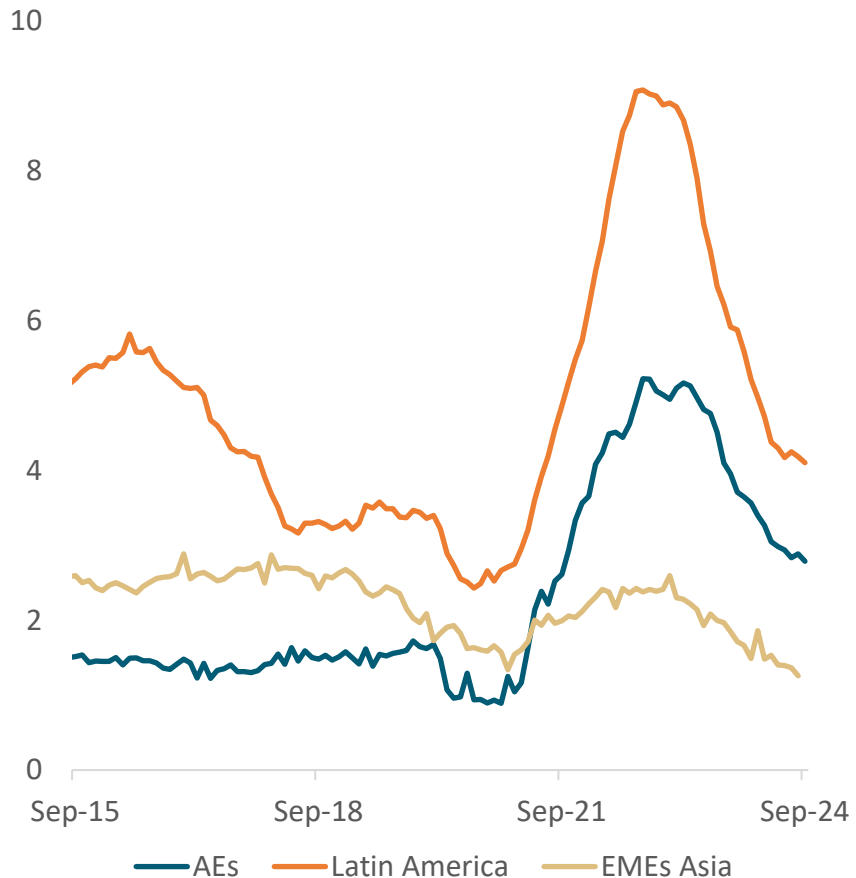
Economic Outlook and Agenda BC#

Roberto Campos Neto

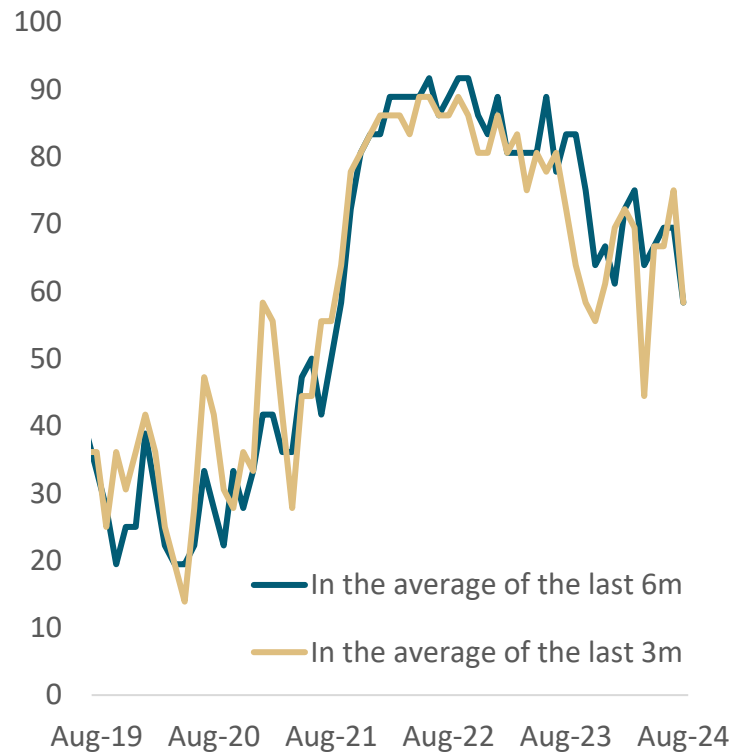
Governor of Banco Central do Brasil

Gradual reduction in inflation. Pace of core disinflation has been slower.

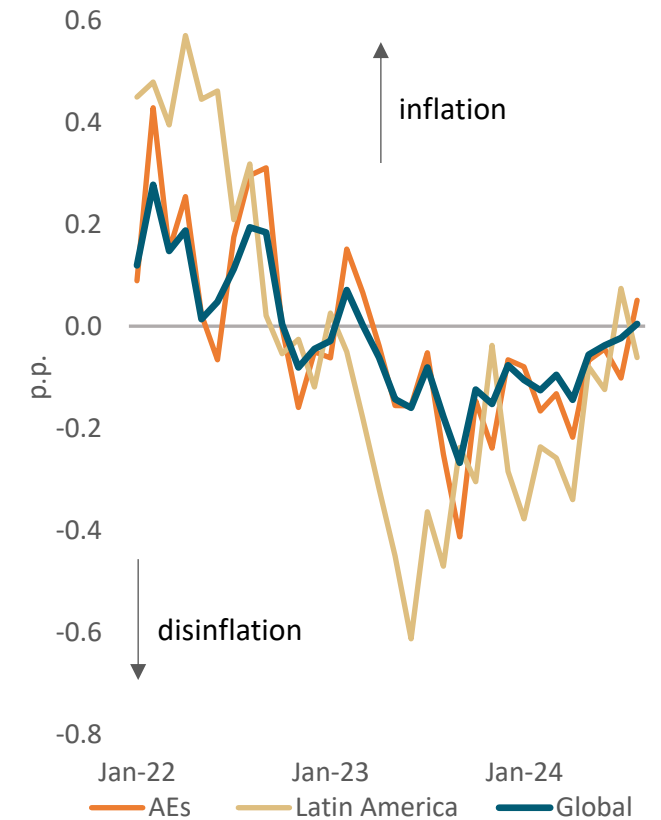
Core inflation*
(% YoY)



Percentage of countries with core inflation above the target**
(% YoY)



Pace of core disinflation
(difference between current month and previous month)

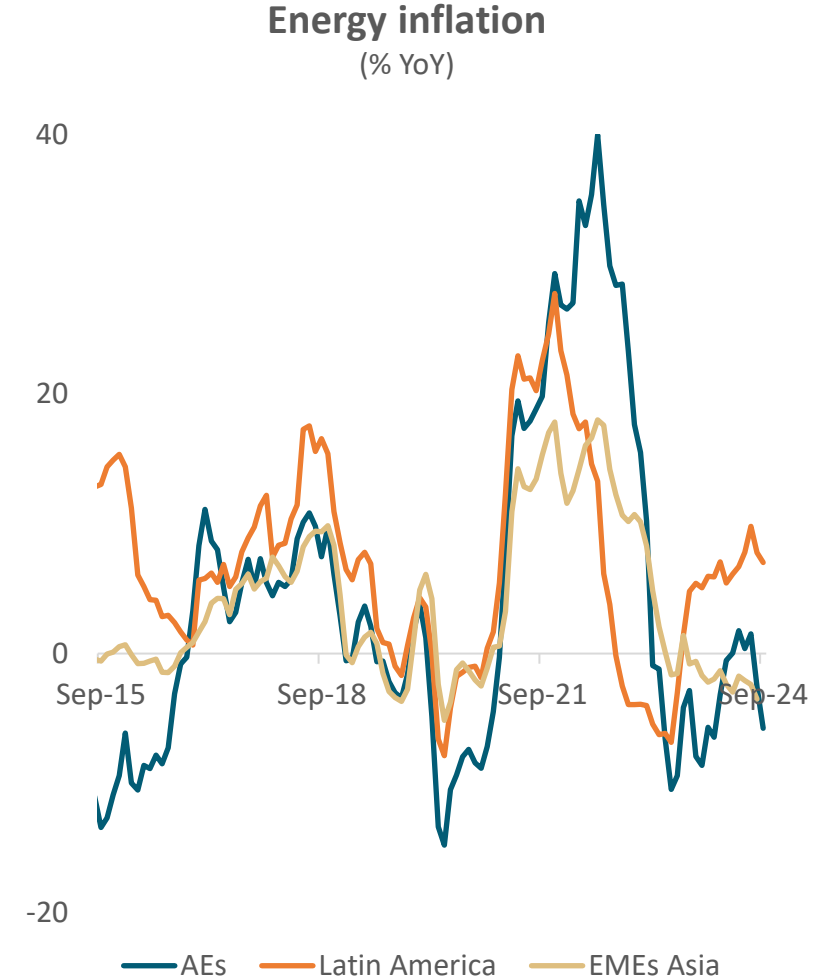
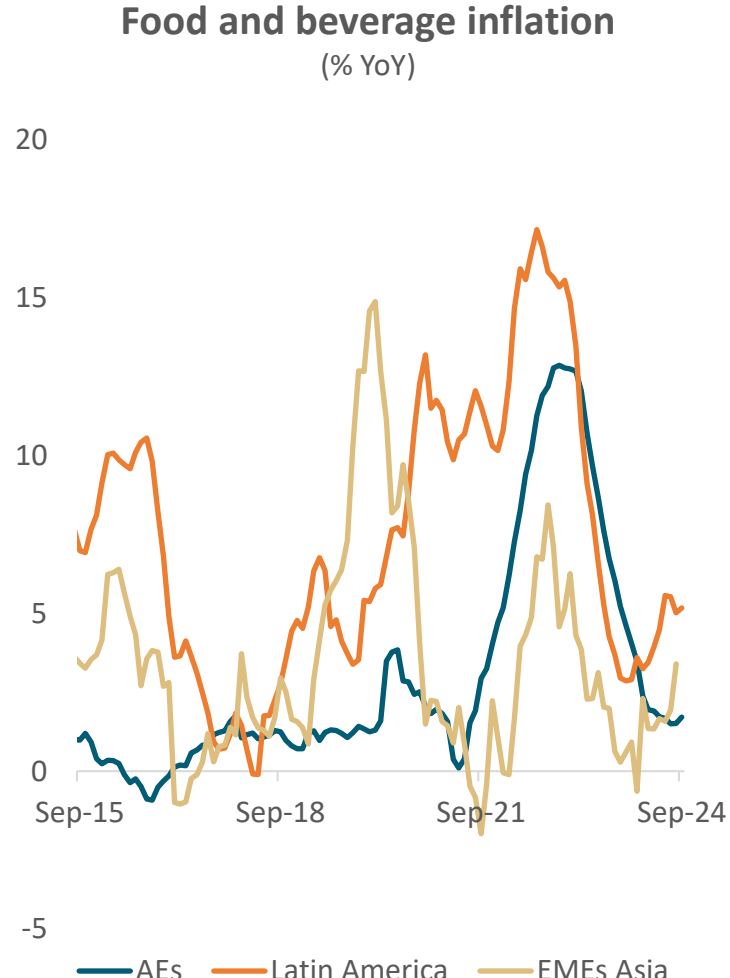
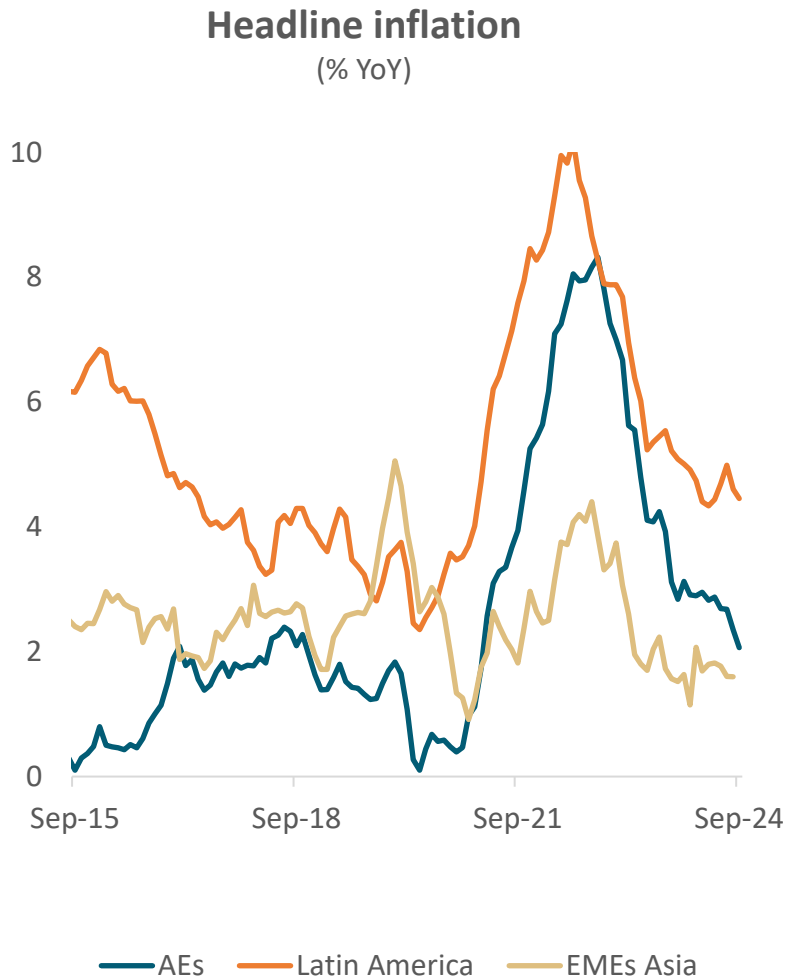


Sources: Bloomberg, Refinitiv, LSEG.

*Weighted by PPP. Latam: BR, MX, CL, CO, PE (except food); Asia EM: CN, ID, IN, KR, PH, TW, TH; AEs: DE, FR, IT, BE, NE, IE, SP, CH, NO, DK, FI, US.

** GER, FRA, UK, ITL, HOL, BEL, IRL, ESP, SUI, NOR, SUE, DIN, FIN, EUA, CAN, MEX, BRA, CHL, COL, CHI, IND, JAP, COR, MYS, TWN, THA, ZAF, TUR, RUS, BUL, CZE, HUN, POL, ROM, ESL.

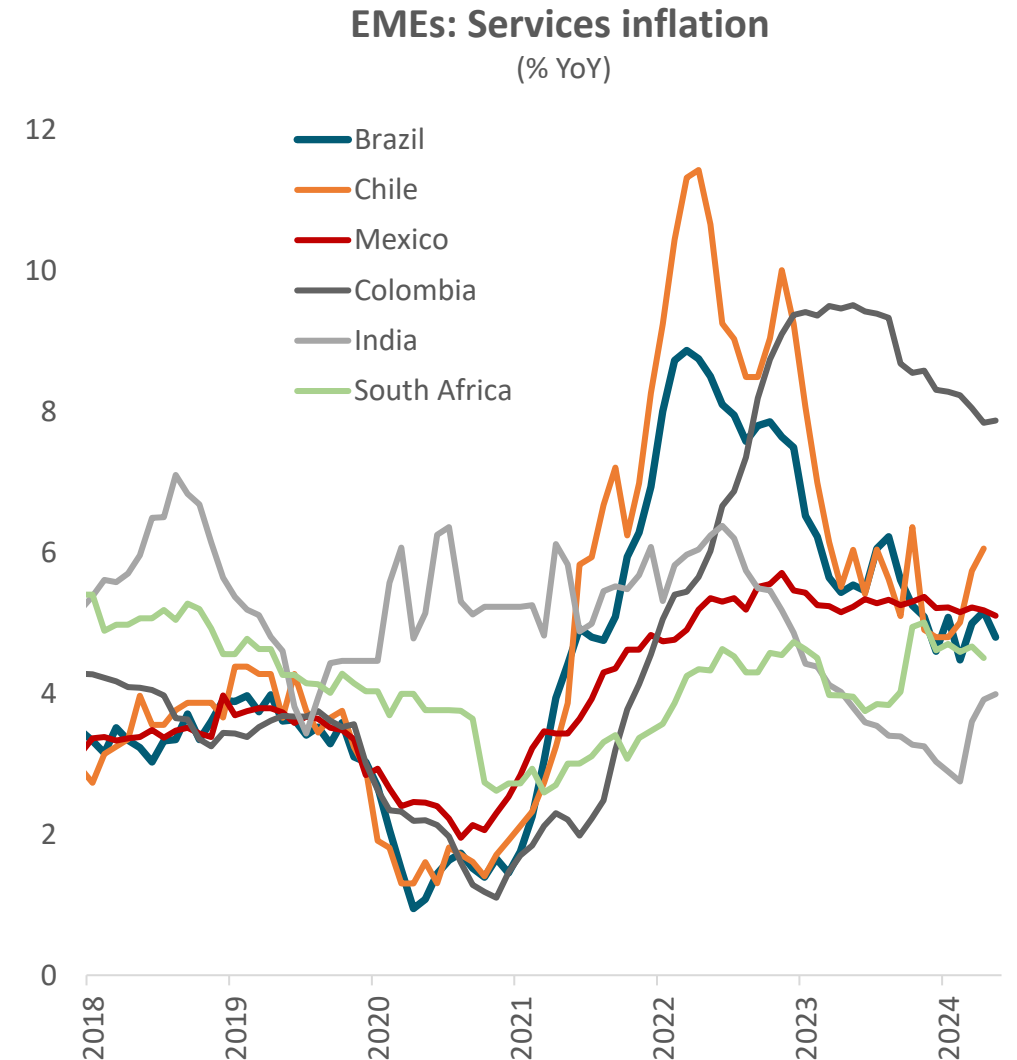
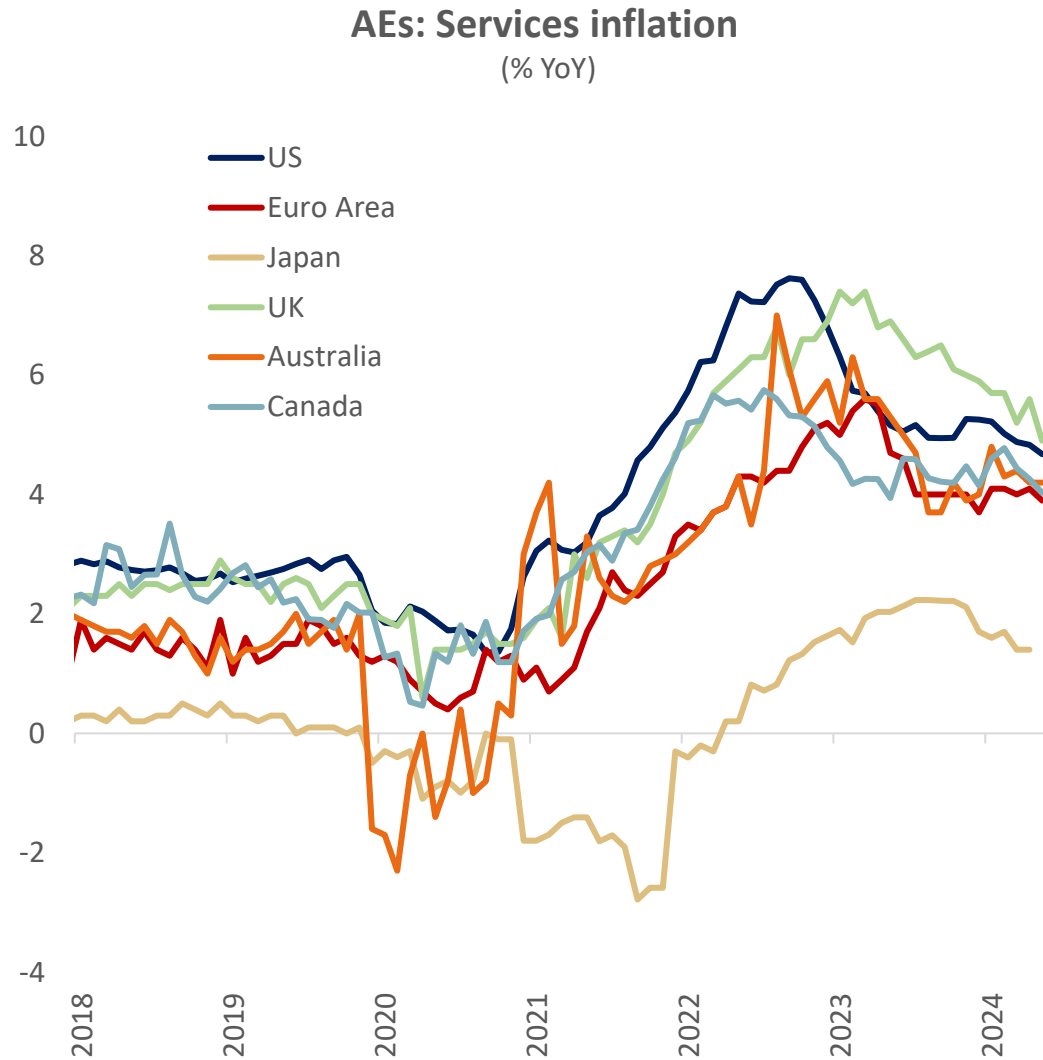
Gradual reduction in inflation. Food and energy prices in Latin America explain divergence between blocs in recent data.



Sources: Bloomberg, Refinitiv, LSEG.

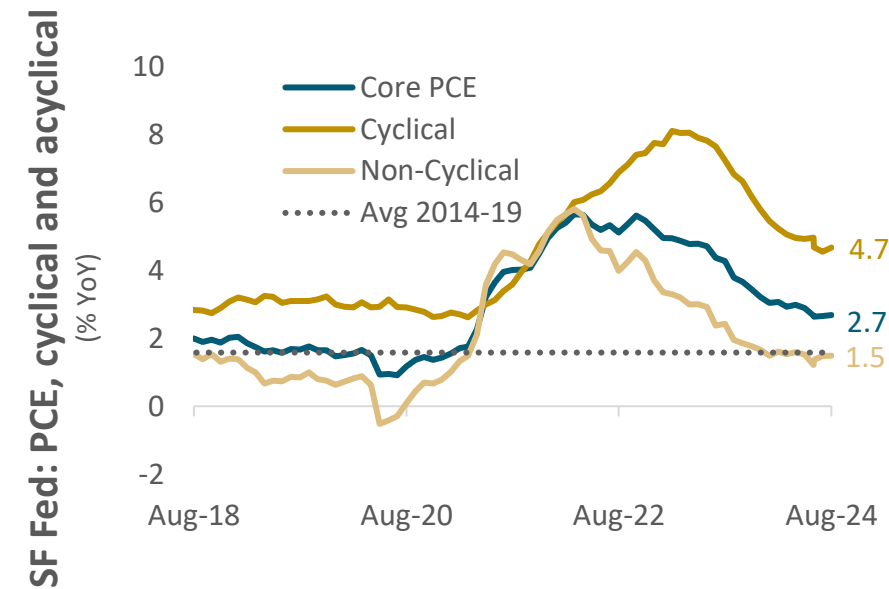
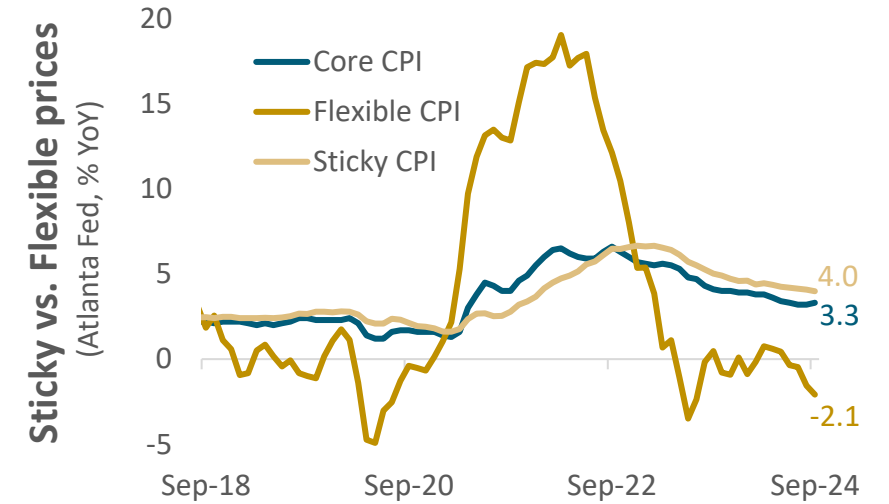
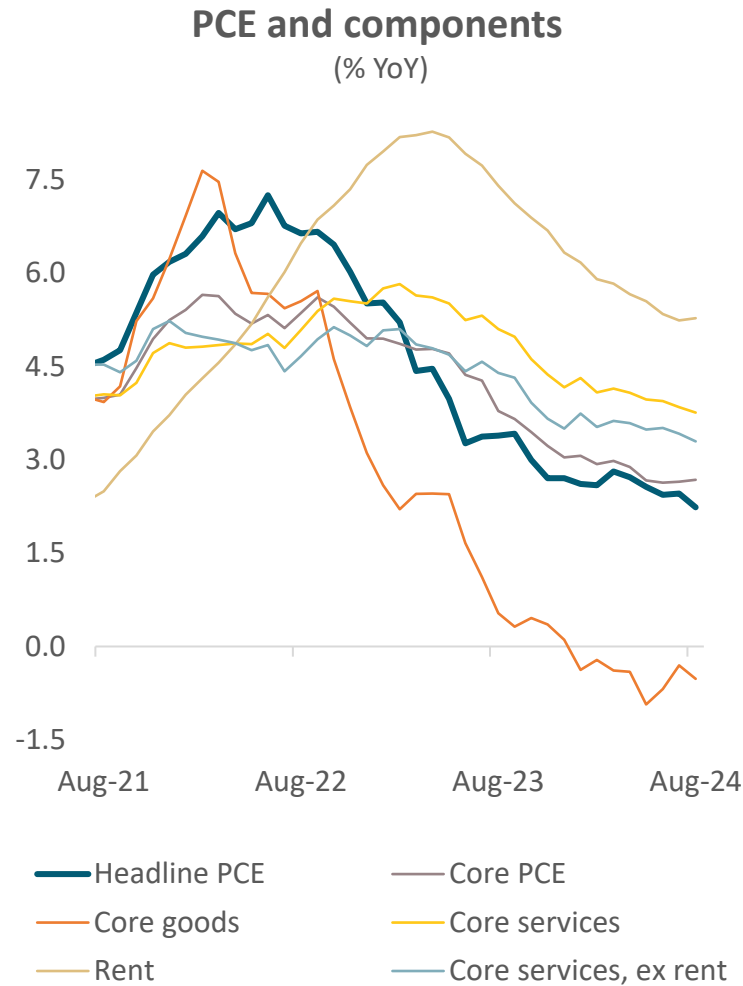
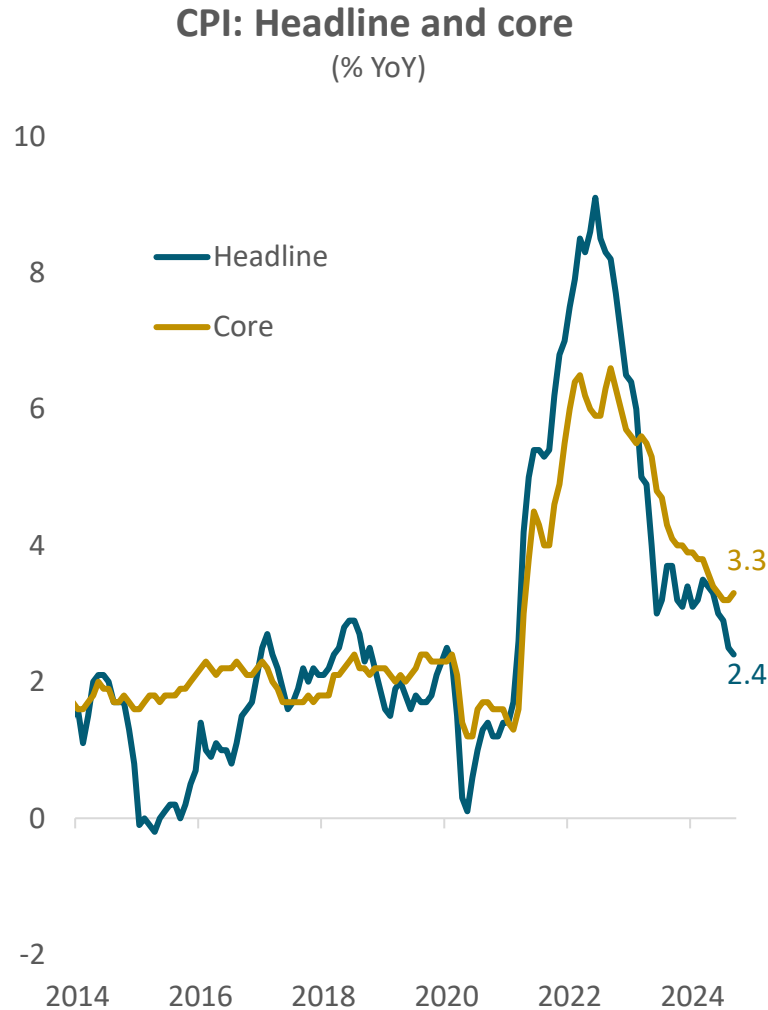
*Weighted by PPP. Latam: BR, MX, CL, CO, PE (except food); Asia EM: CN, ID, IN, KR, PH, TW, TH; AEs: DE, FR, IT, BE, NE, IE, SP, CH, NO, DK, FI, US.

Resilience in services inflation partly explained by buoyant labor markets in different countries.



Sources: Bloomberg, BIS Annual Economic Report 2024.

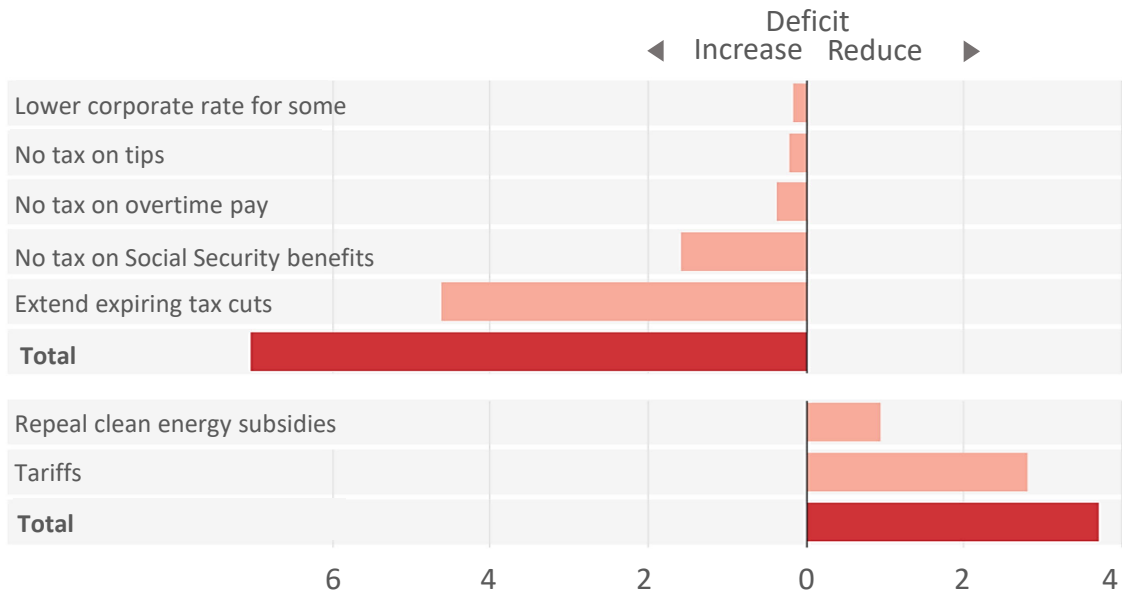
Gradual reduction in inflation and alternative measures of core inflation.



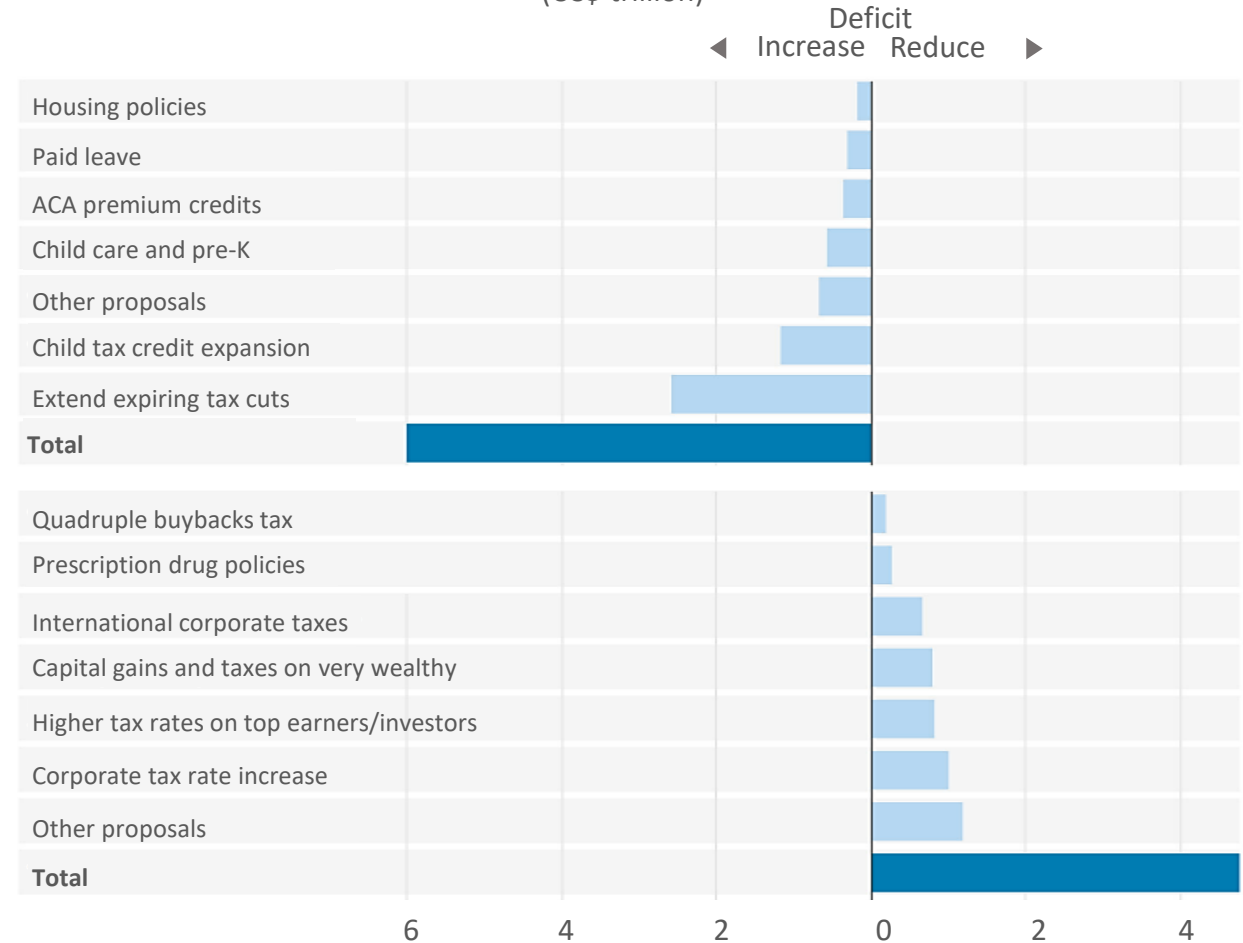
Sources: Bloomberg, Fed.

Proposals discussed during the U.S. election campaign imply fiscal expansion.

Fiscal outlook under Trump (US\$ trillion)



Fiscal outlook under Harris (US\$ trillion)

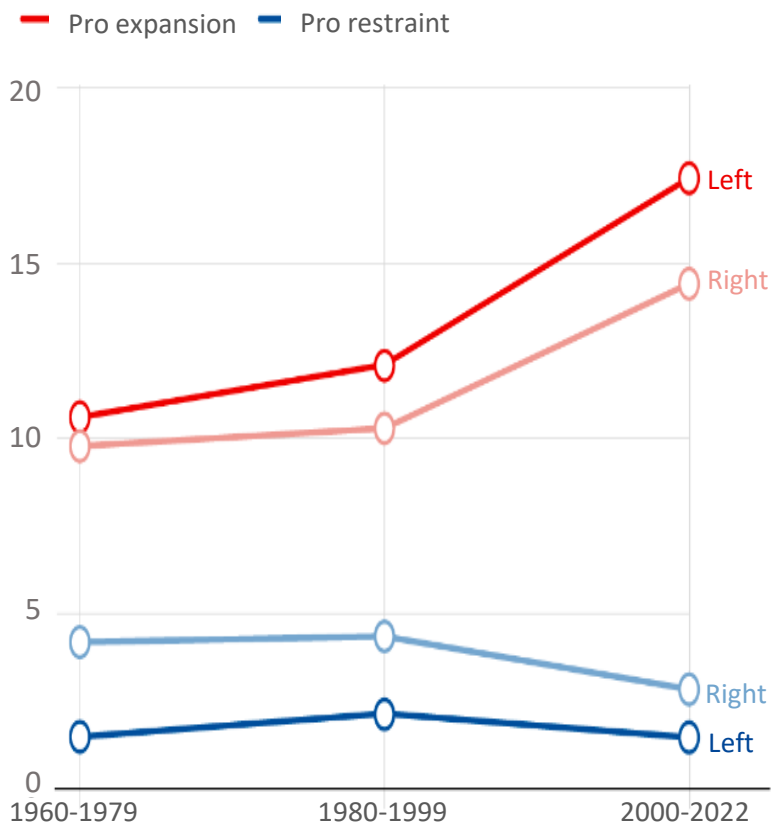


Proposals discussed during the U.S. election campaign would have an inflationary effect, if implemented.

Fiscal policy

Evolution of discourse by party family

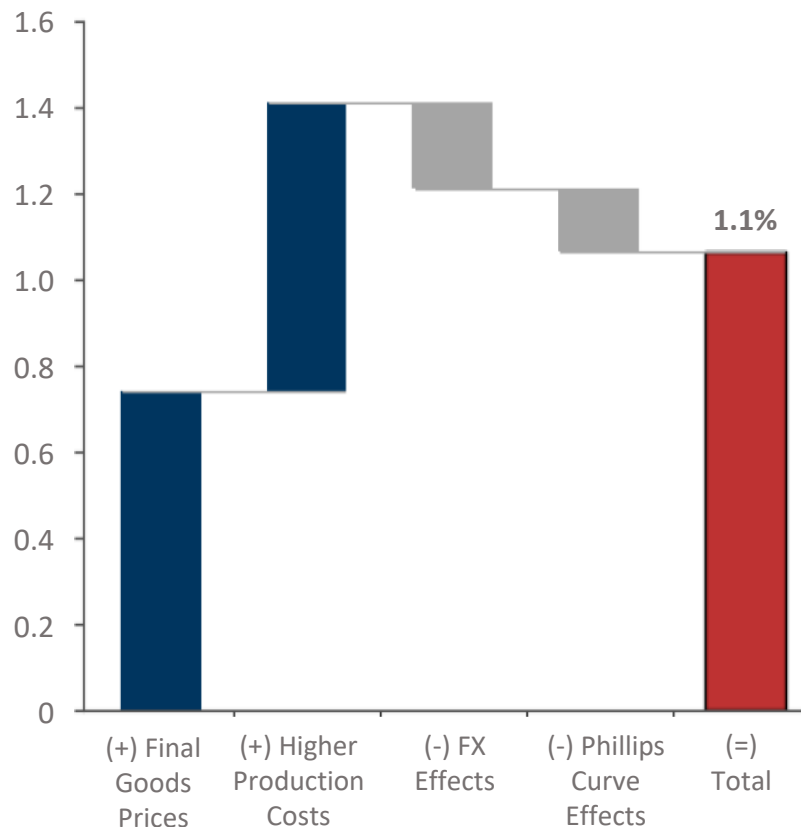
(% of platform)



Import tax

Effect on U.S. inflation of tariff hikes*

(%)

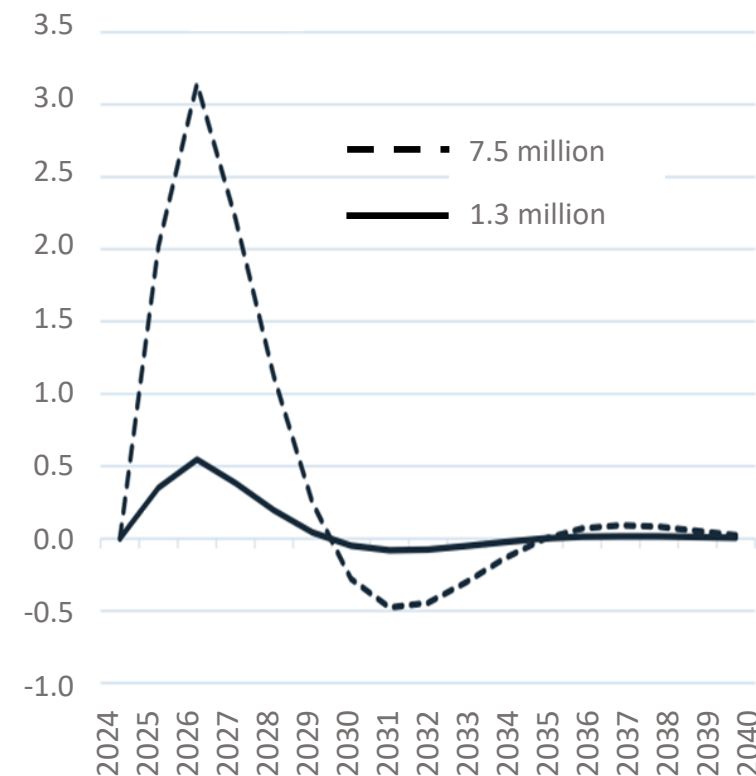


*The exercise consists on a 10 p.p. hike in import tariffs by the U.S., followed by a 10 p.p. retaliation by other countries.

Immigration policy

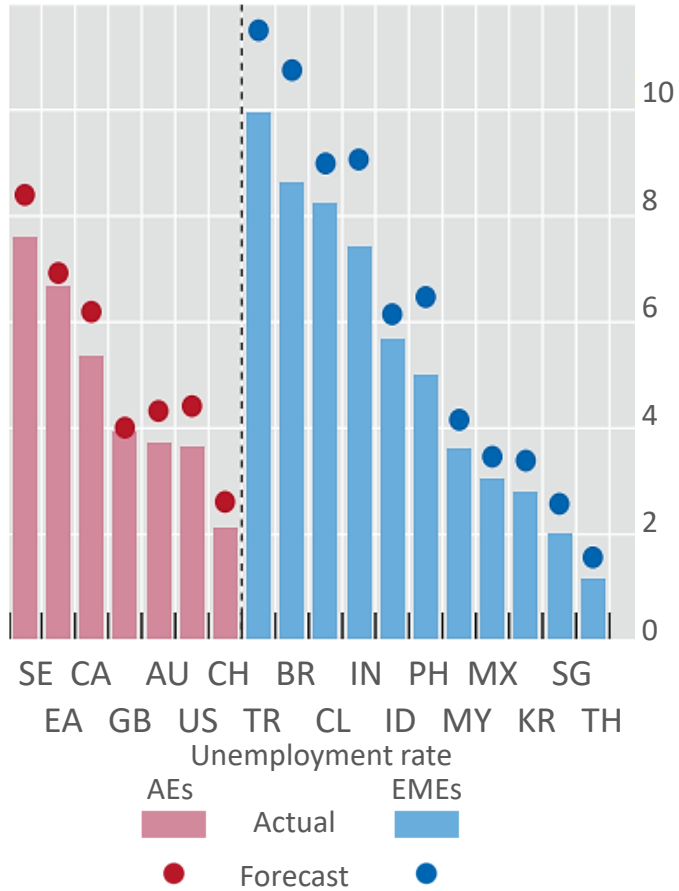
Effect on U.S. inflation of changes in the immigration policy

Scenario 1: deportation of 1.3 mi people from the US
Scenario 2: deportation of 7.5 mi people from the US
(Effect in p.p.)

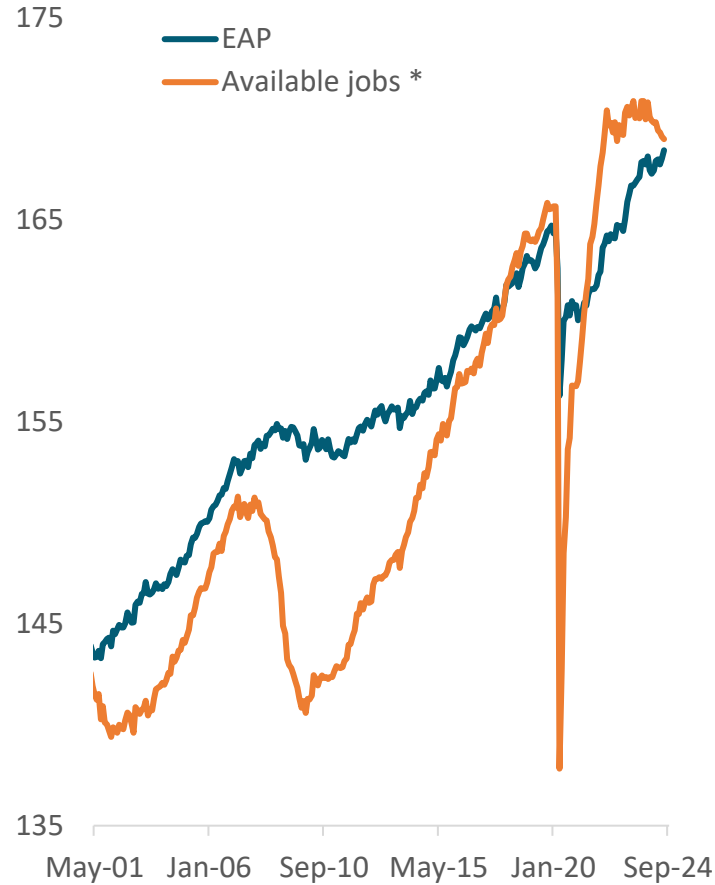


Labor market has been tight in most countries. Labor has also experienced many structural changes.

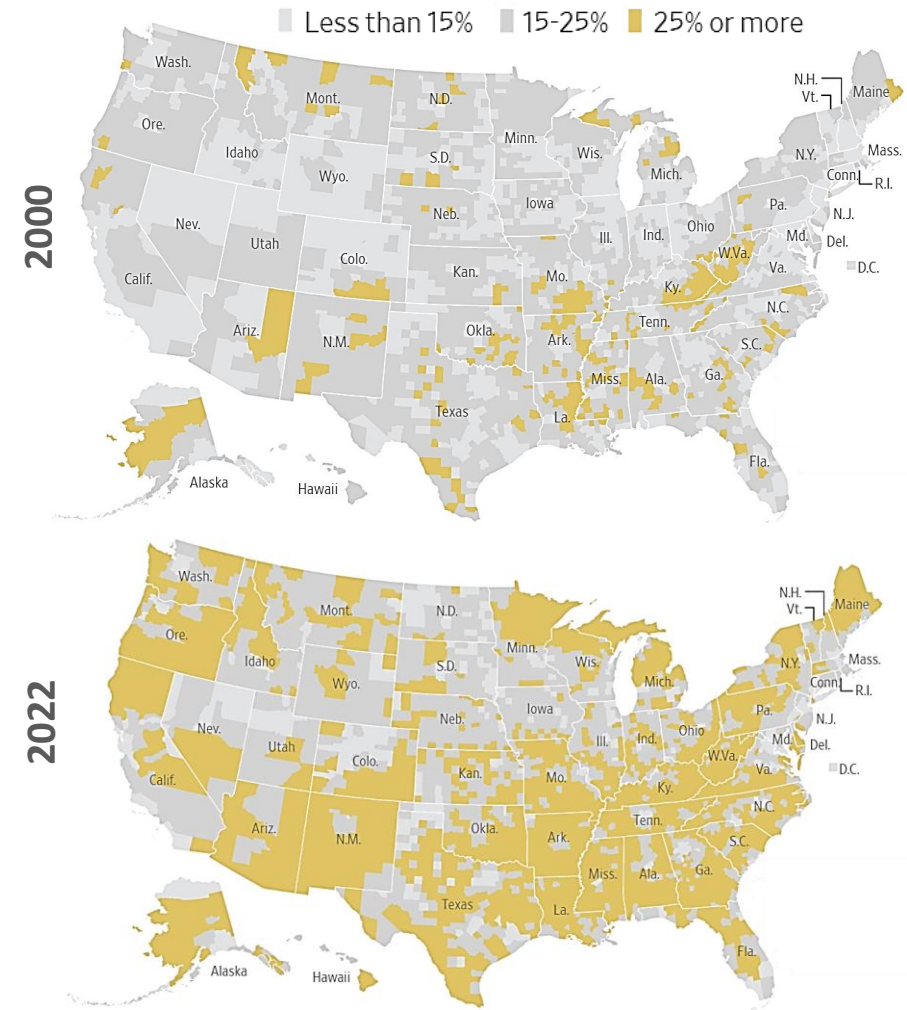
Unemployment: Actual vs. forecast based on GDP growth



U.S.: Available jobs and labor supply (million)



U.S.: Share of personal income from government assistance, by counties

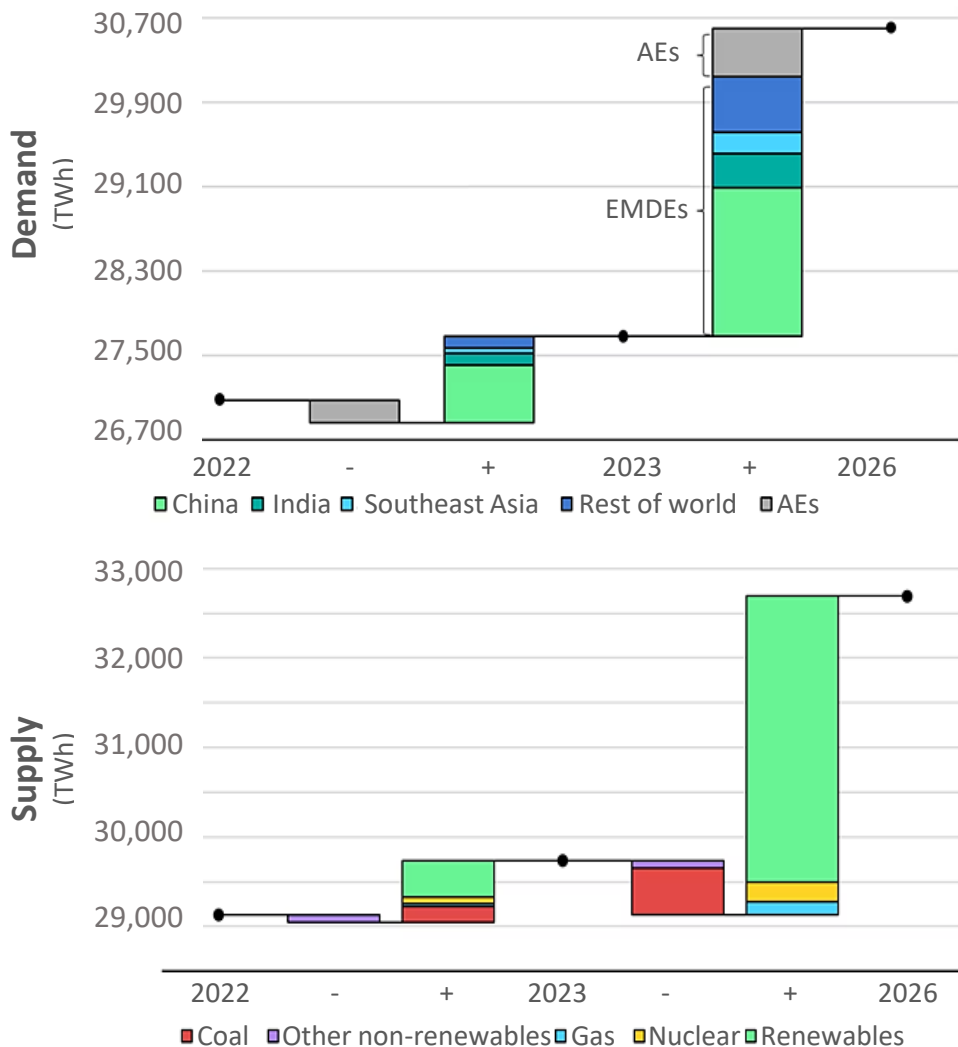


* Corresponds to employment plus job openings.

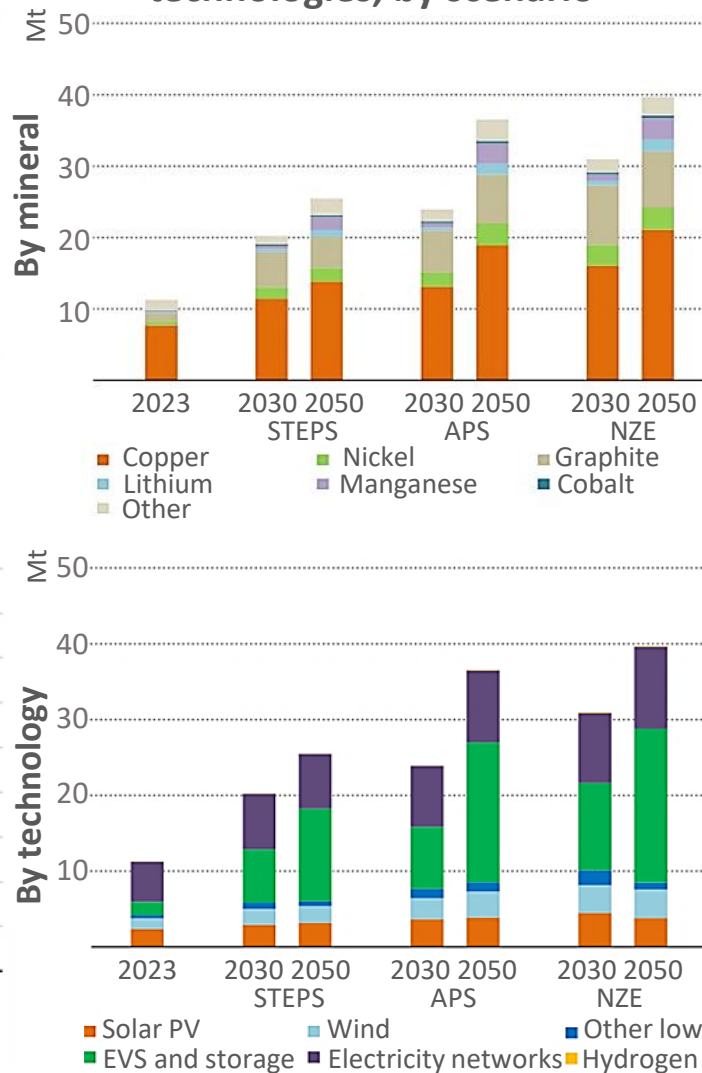
Countries: SE=Sweden, CA=Canada, AU=Australia, CH=Switzerland, BR=Brazil, IN=India, PH=Philippines, MX=Mexico, SG=Singapore, EA=Euro Area, GB=Great Britain, US=United States, TR=Turkey, CL=Chile, ID=Indonesia, MY=Malaysia, KR=Korea, TH=Thailand. Actual and predicted show the average unemployment rate between Q1 2022 and Q4 2023.

Sources: BIS, BLS, WSJ/EIG.

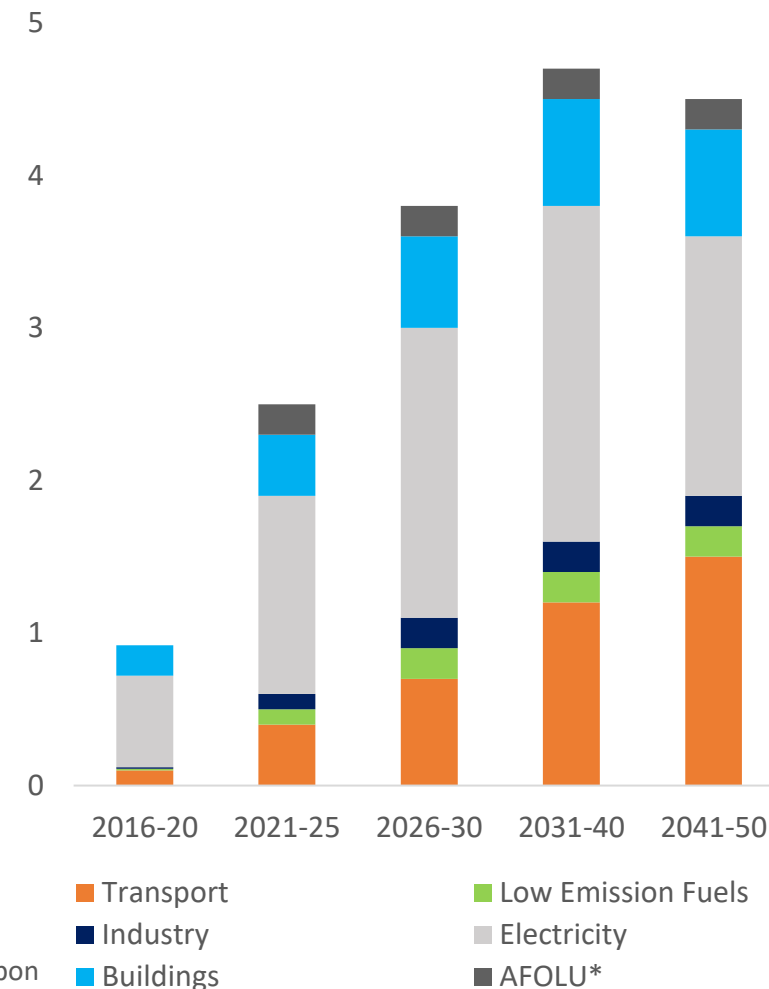
Change in energy demand and supply



Mineral requirements for clean energy technologies, by scenario*



Annual average investment requirement across sectors (2021-2050, in USD trillion)

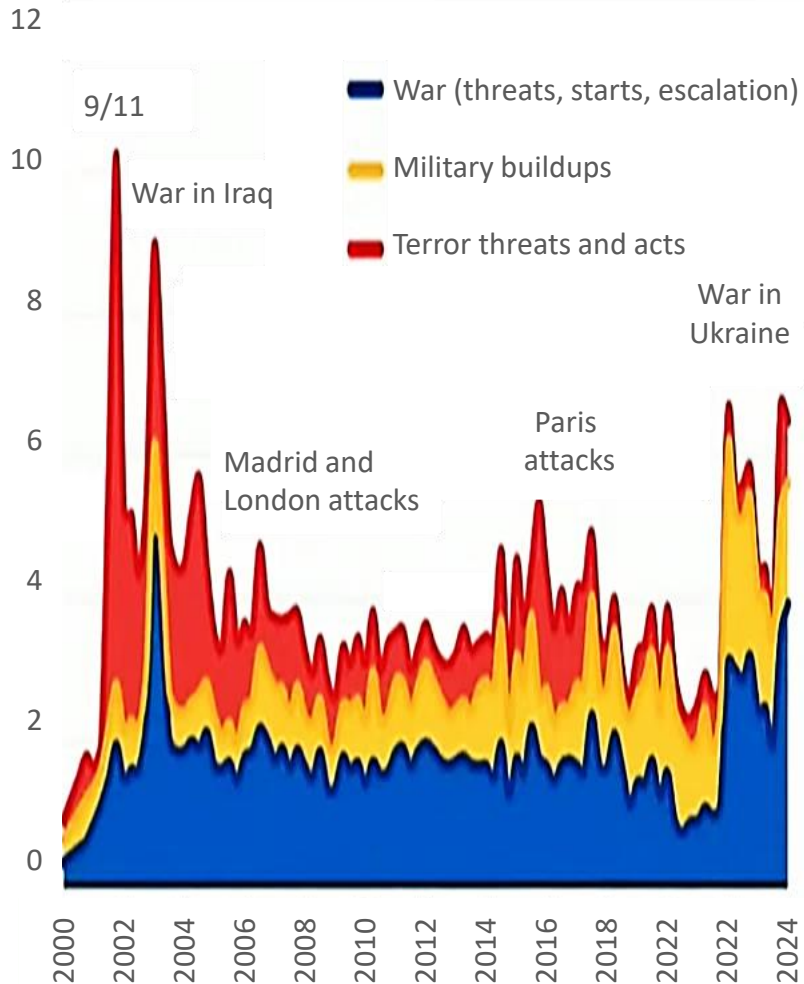


Sources: IEA.

*STEPS: States Policies Scenario, APS: Announced Pledges Scenario, NZE: Net Zero Emissions by 2050

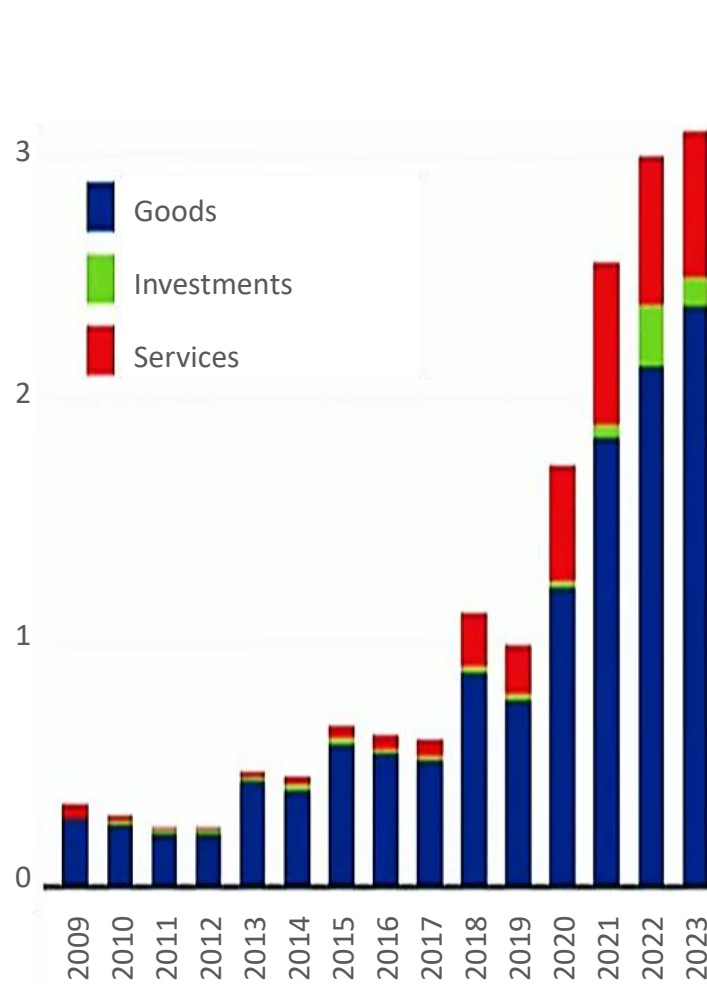
*Agriculture, Forestry, and Other Land Use

Geopolitical risk (Index)

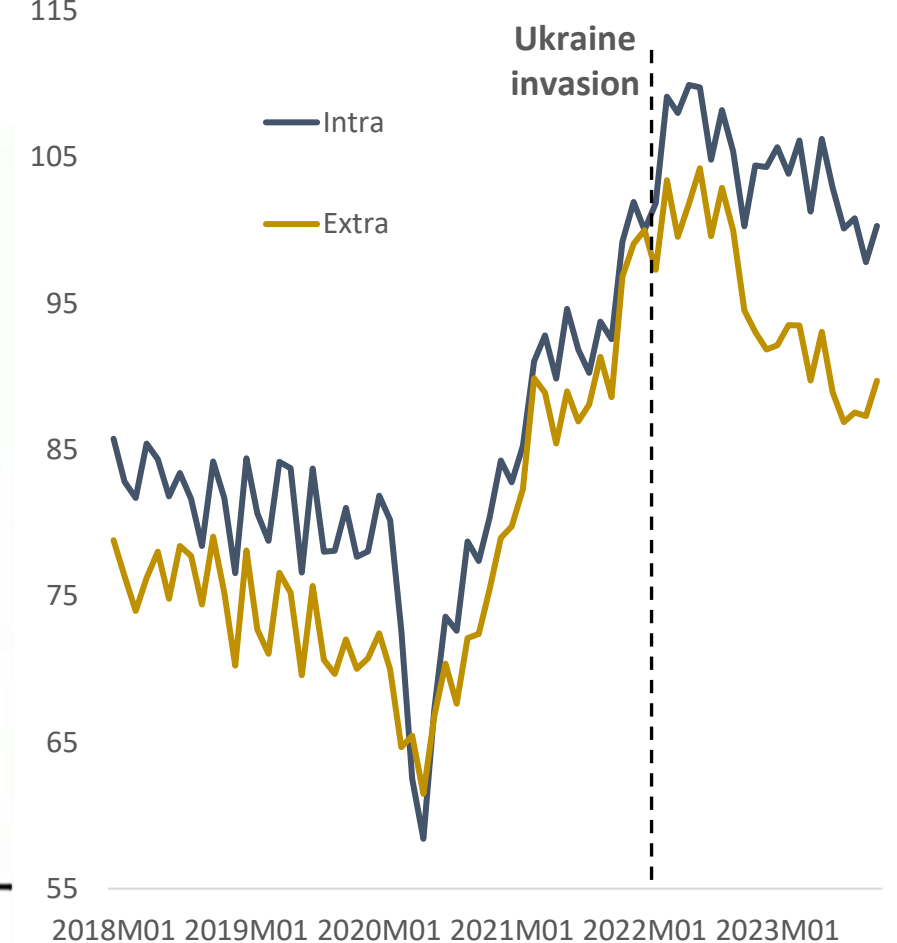


Sources: IMF, WTO

Trade restrictions (thousand)

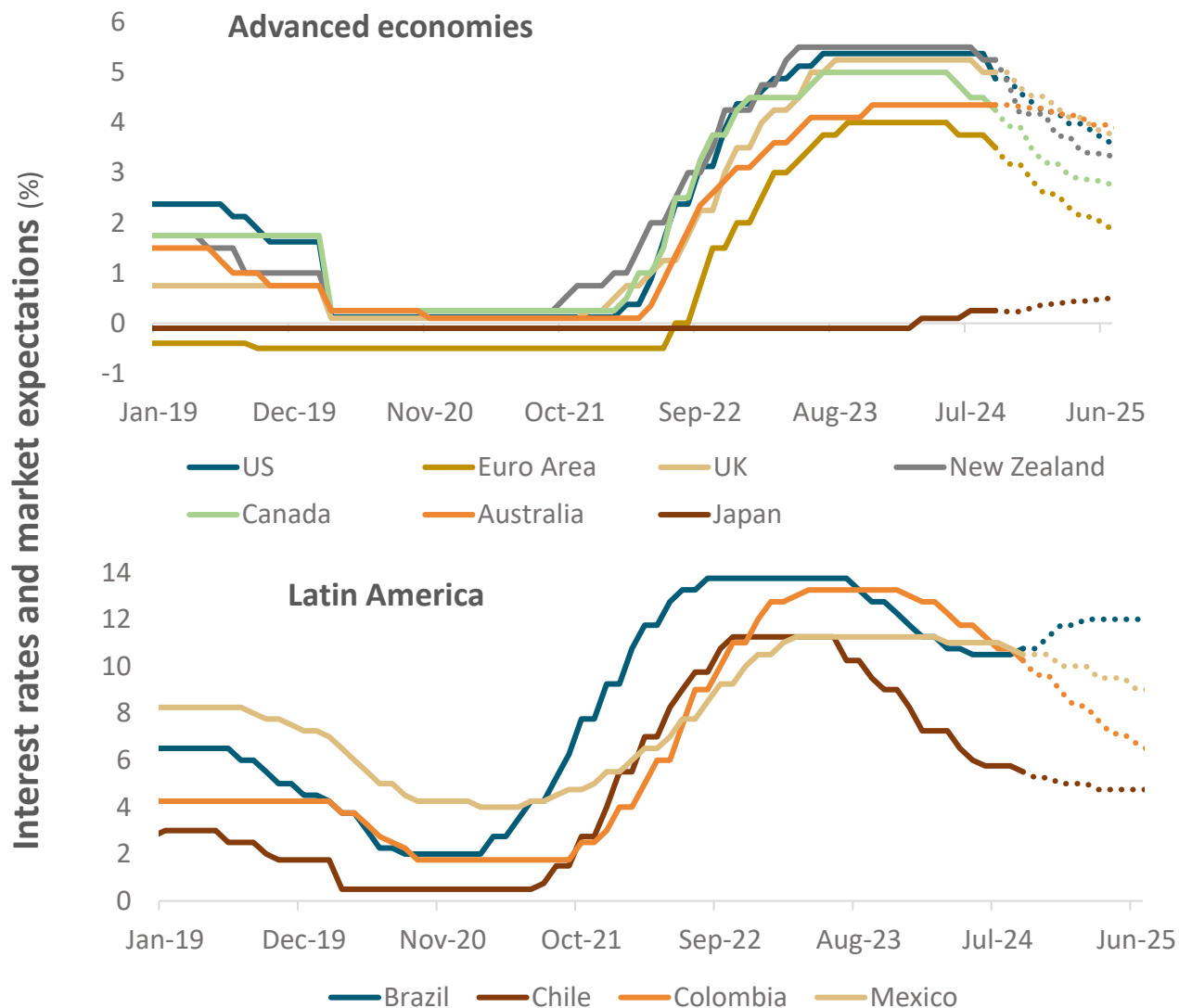


Trade between geopolitical blocks (Jan/2022 = 100)



Sources: IMF, WTO

Lower synchronization of monetary policy cycles among countries.



Sources: Bloomberg, central banks, BCB.

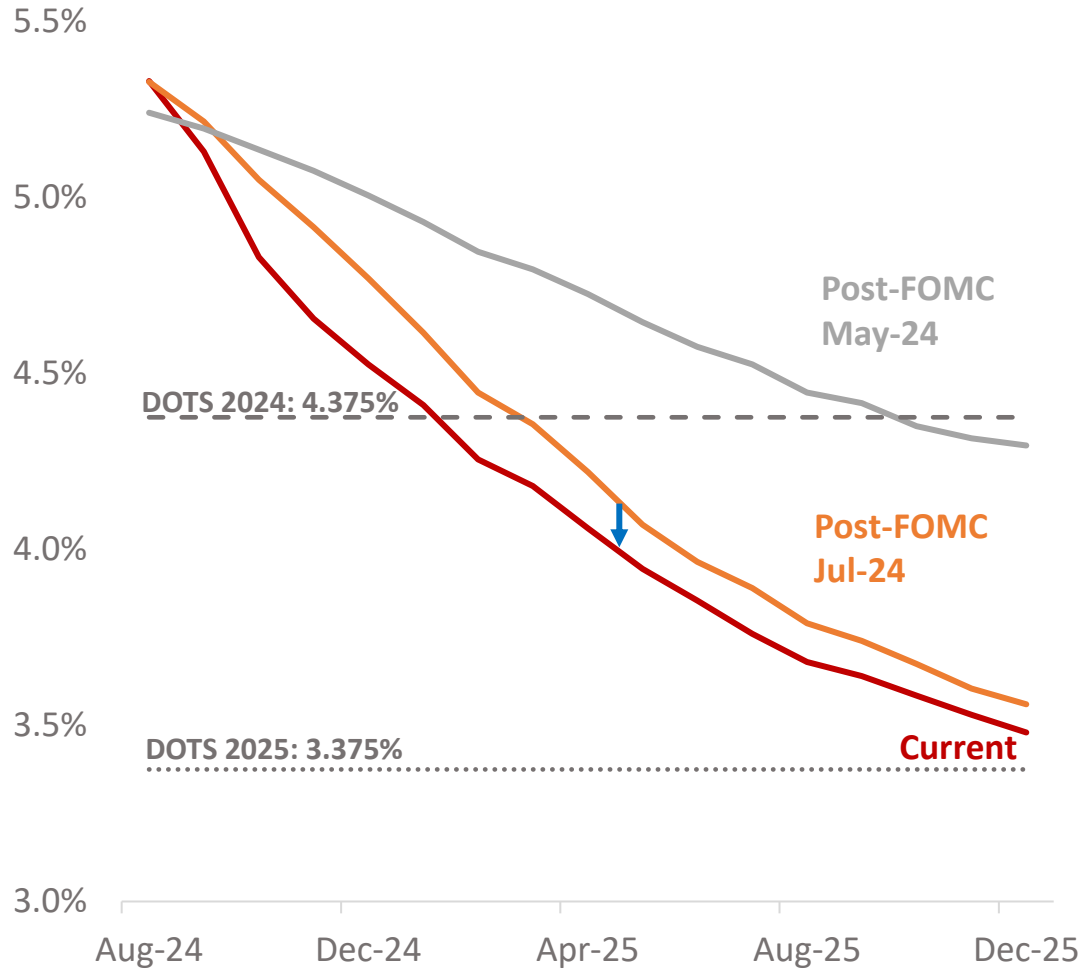
Monetary policy pricing

MONETARY POLICY PRICING				
10/22/2024				
Country	Rate (%)	6 months pricing	1 year pricing	
	last decision	base-points	base-points	
Aes				
US	4,88 ↓	-81	-126	
Canada*	3,75 ↓	-86	-106	
Euro area	3,25 ↓	-126	-154	
UK	5,00 =	-88	-130	
Australia	4,35 =	-23	-55	
Newa Zealand	4,75 ↓	-129	-149	
Japan	0,25 =	+22	+31	
EMEs				
Mexico	10,50 ↓	-56	-111	
Chile	5,25 ↓	-54	-74	
Brazil	10,75 ↑	+208	+280	
Colombia	10,25 ↓	-181	-242	
Russia	19,00 ↑	+4	-130	
South Africa	8,00 ↓	-55	-83	
China	1,50 ↓	-25	-33	
India	6,50 =	-39	-65	
Korea	3,25 ↓	-34	-54	

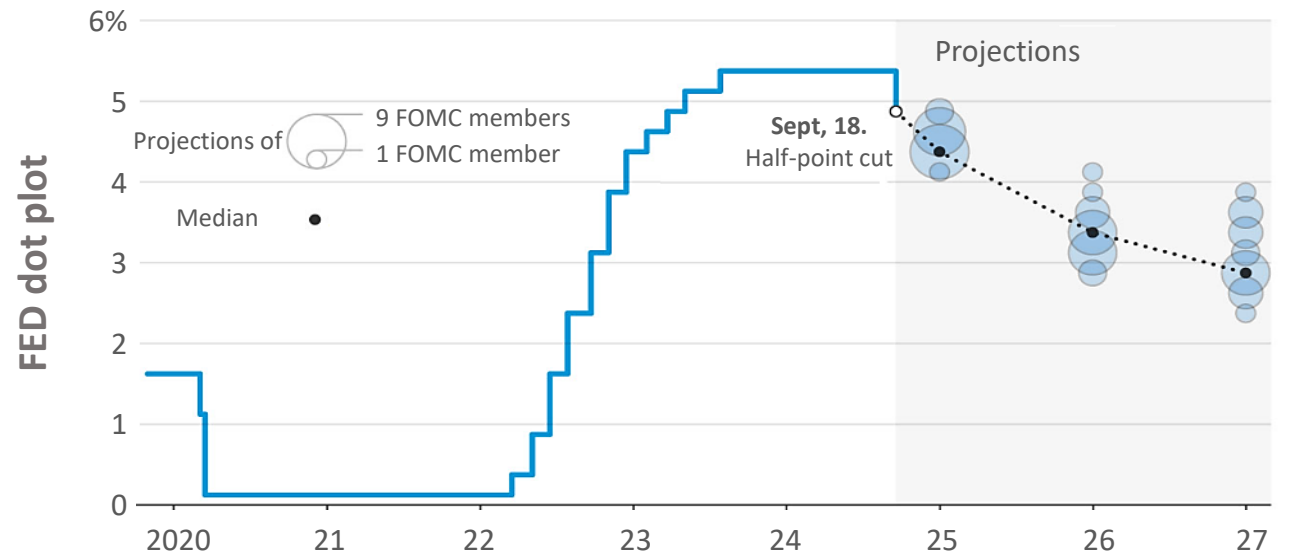
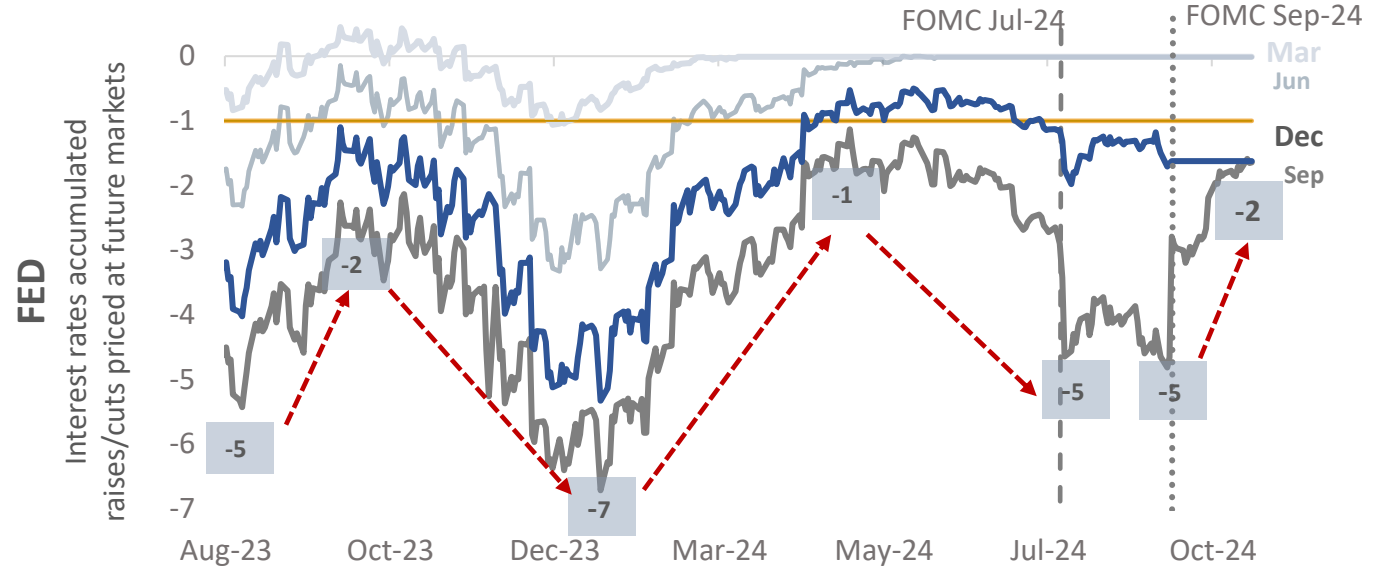
* Canada - pricing in 10/23, after cut decision

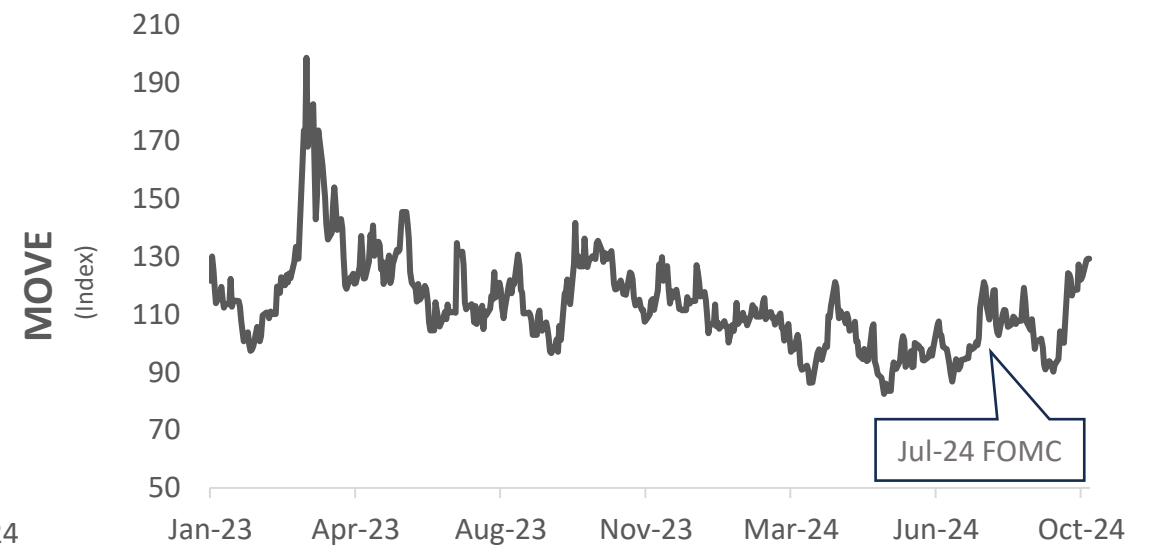
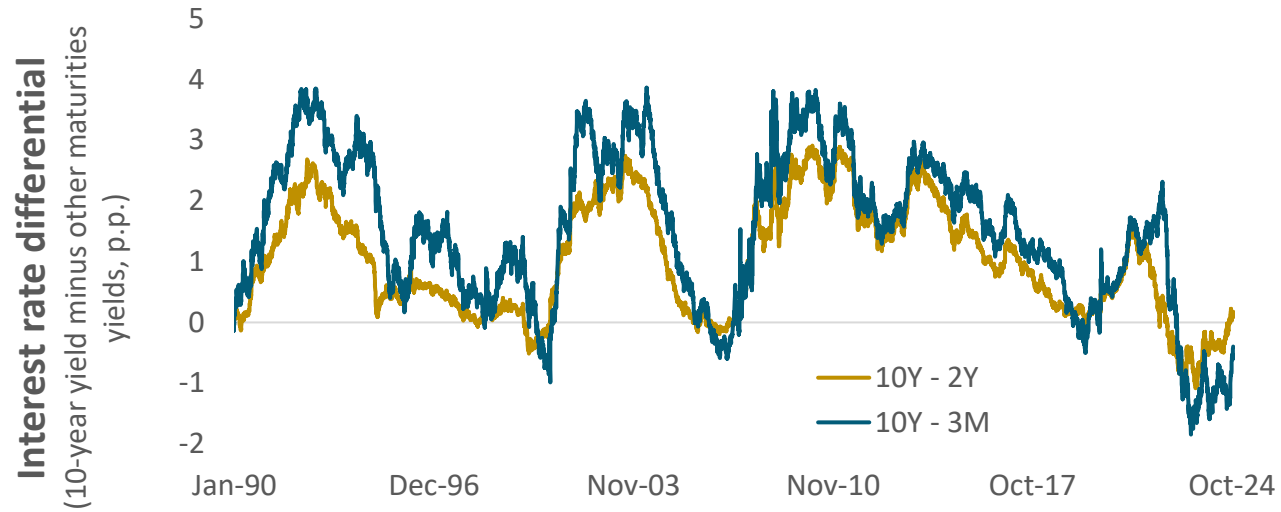
Fed kicks off easing cycle, with a 50-bps rate cut.

Fed Funds terminal rates (future curves)



Sources: Bloomberg, Fed, WSJ.

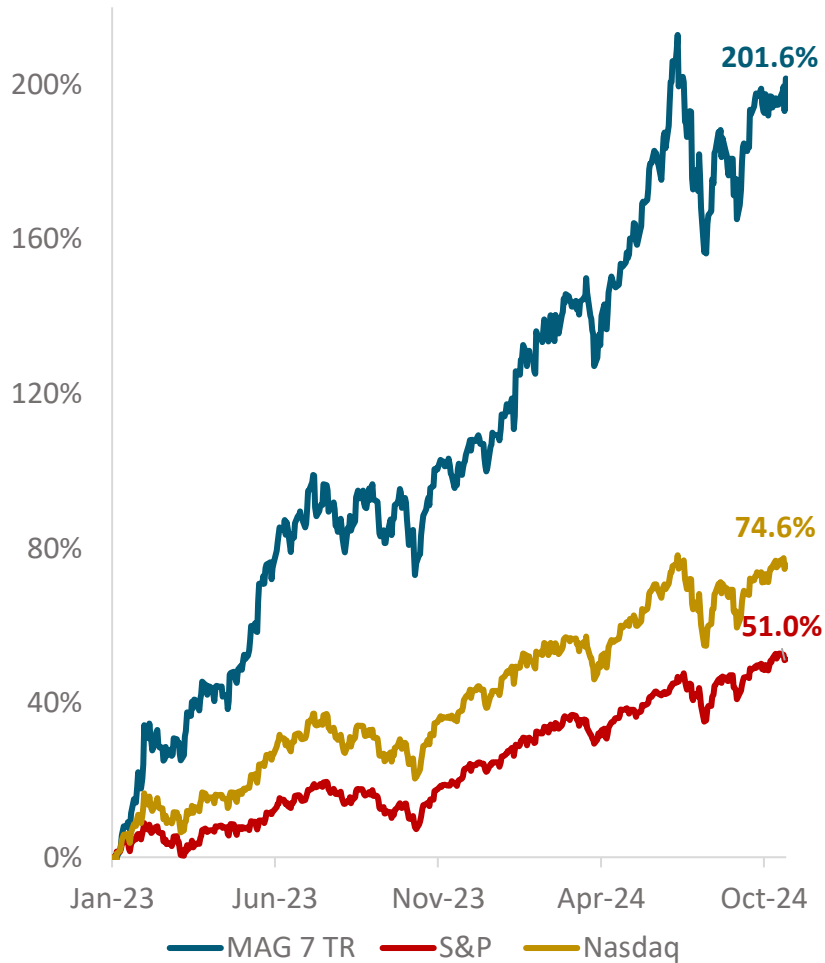




Stock markets recover after peak of volatility in markets.

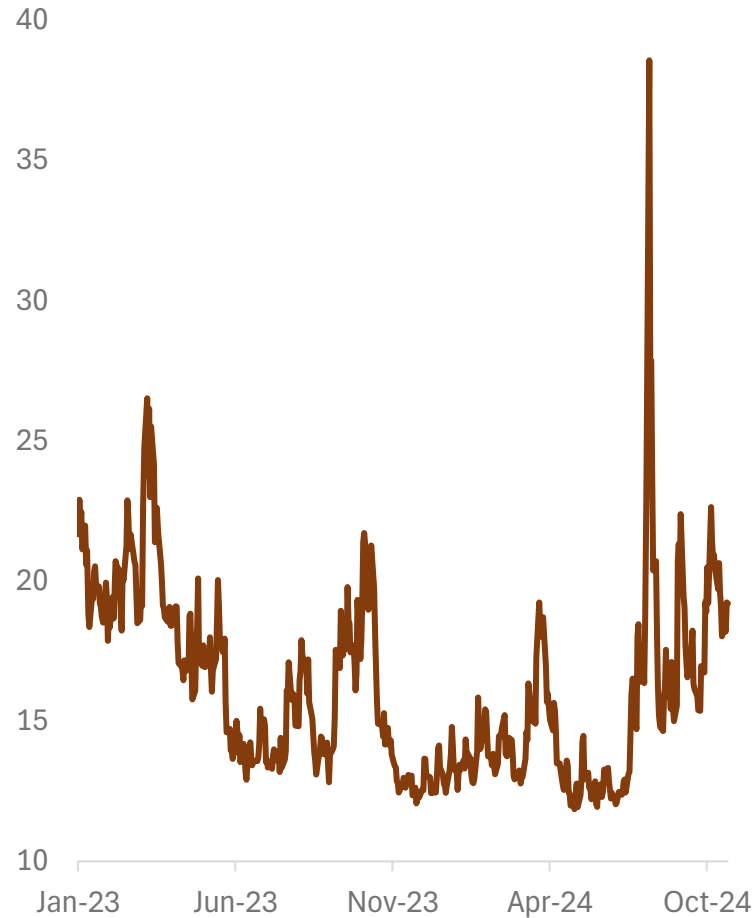
MAG7 vs. Stock markets

(accumulated appreciation since Jan/23, %)



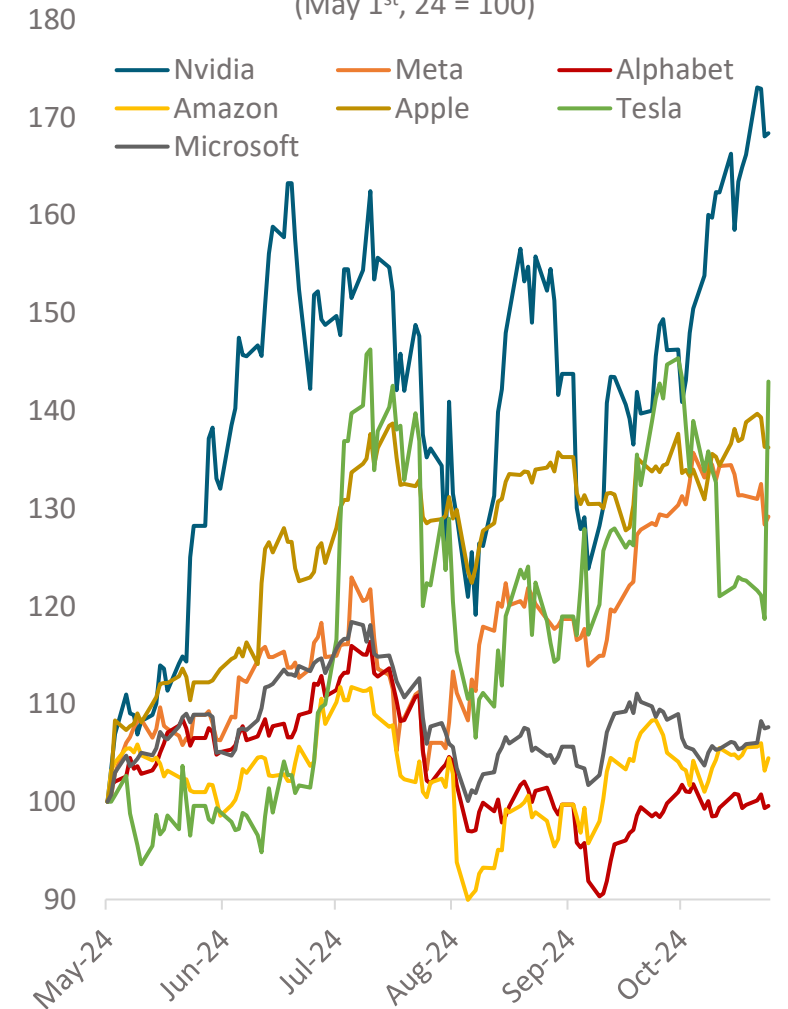
VIX

(Index)

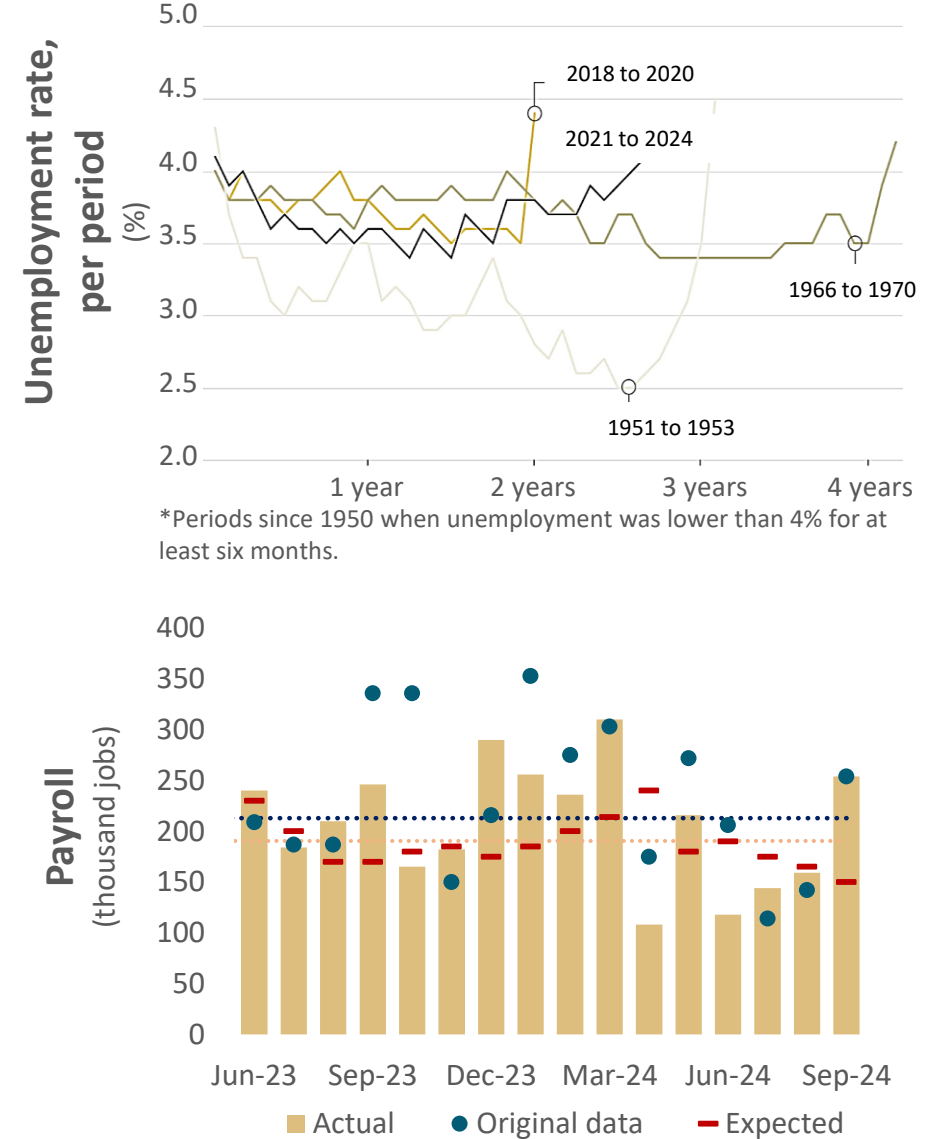
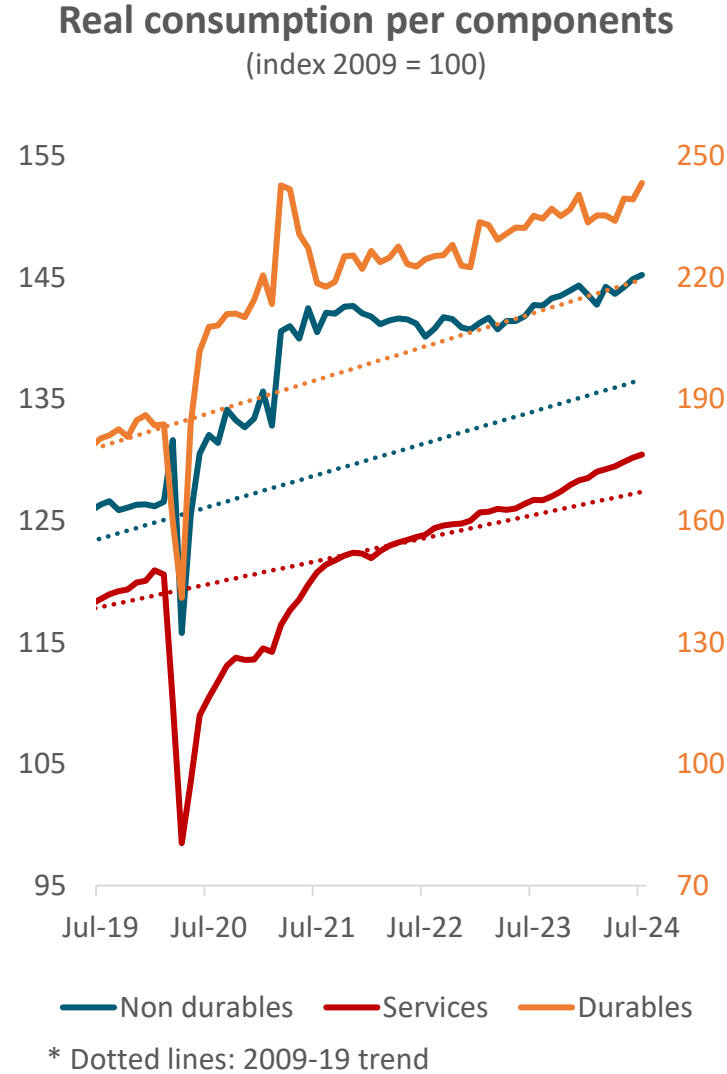
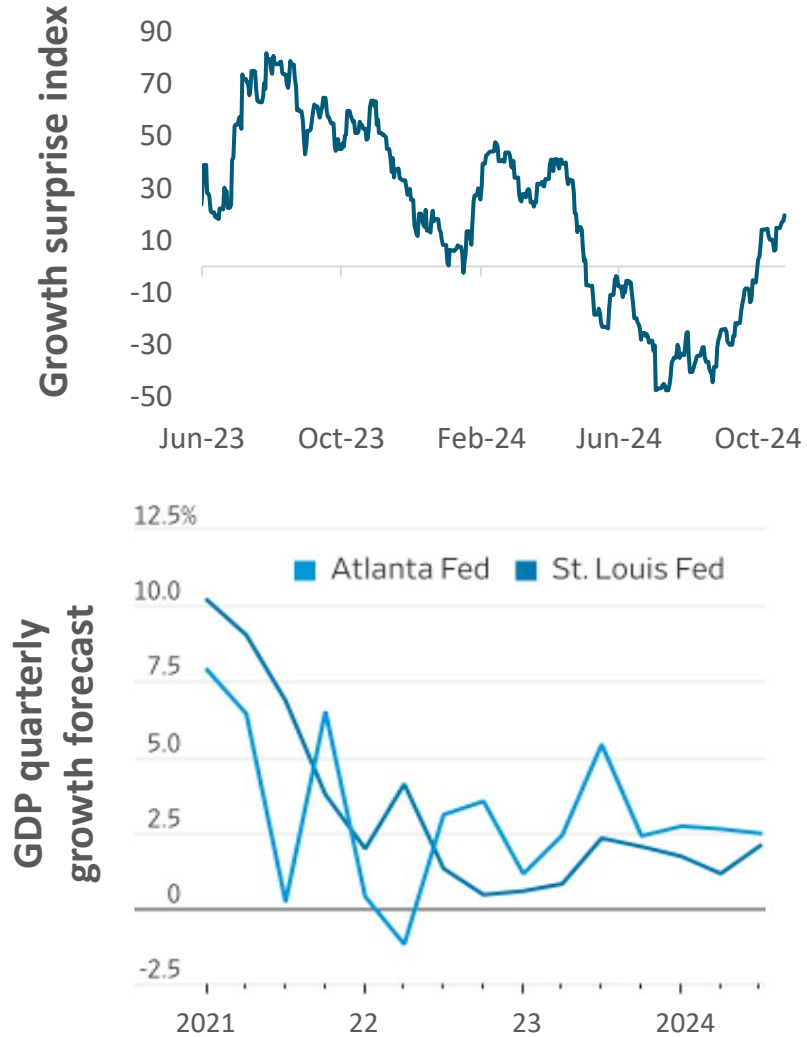


Performance of MAG7 stocks

(May 1st, 24 = 100)



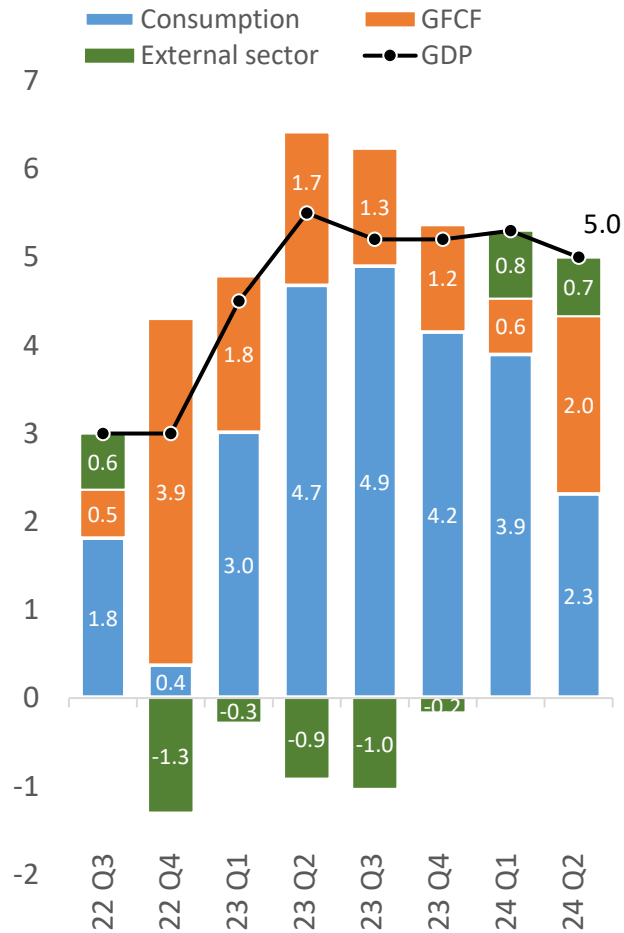
Scenario marked by doubts about the pace of the slowdown in economic activity.



Growth slowing down. Concerns on China's economic performance remain.

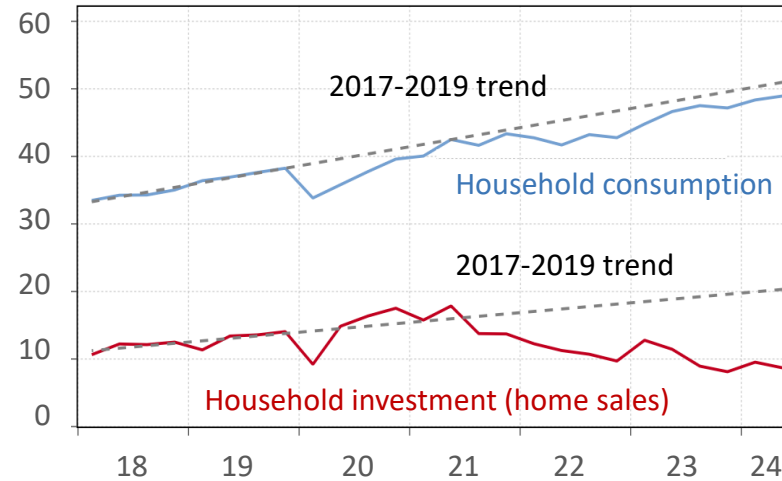
GDP and contributions

(% y/y), contribution in p.p.



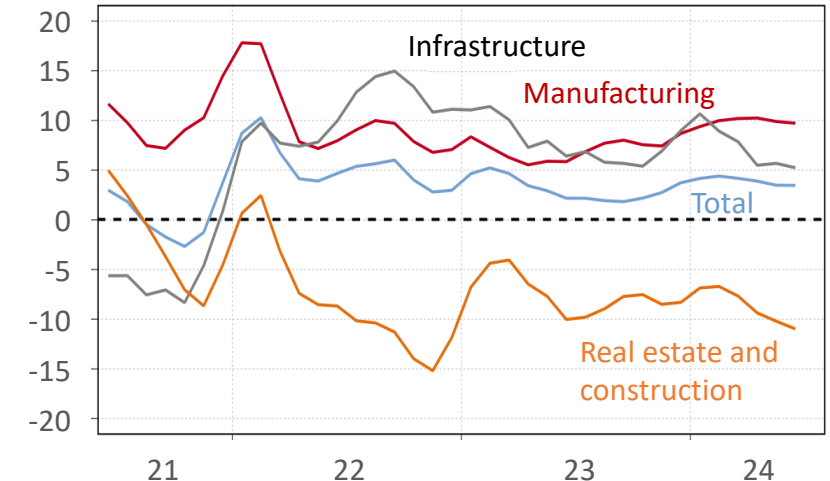
Household consumption and home sales

(s.a., annual rate vs. pre-2020 trend, RMB trillion)

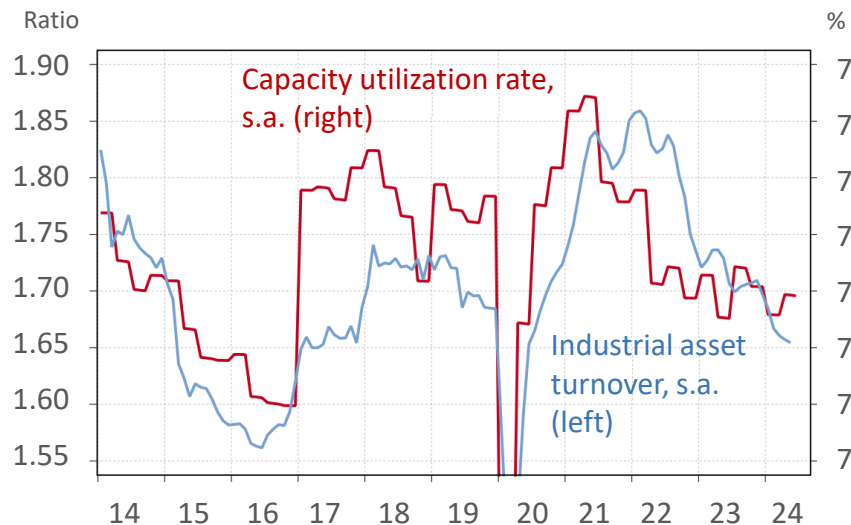


Fixed asset investment

(y/y % change, 3-m.m.a., adjusted by sector)

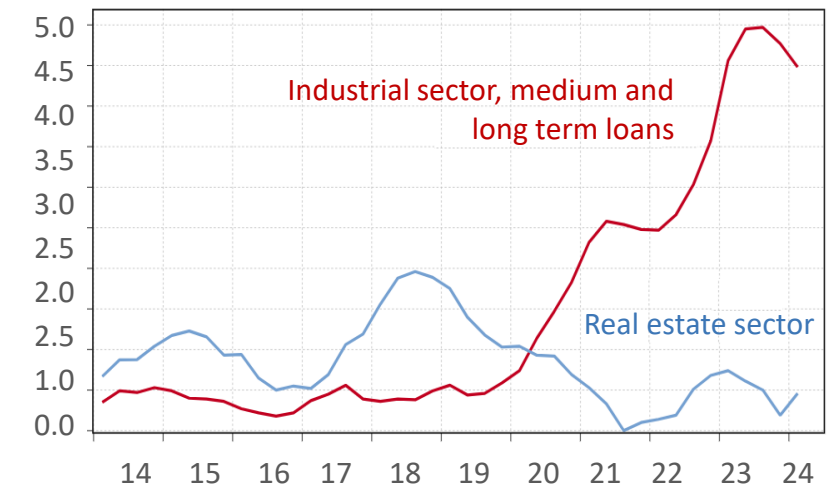


Capacity utilization



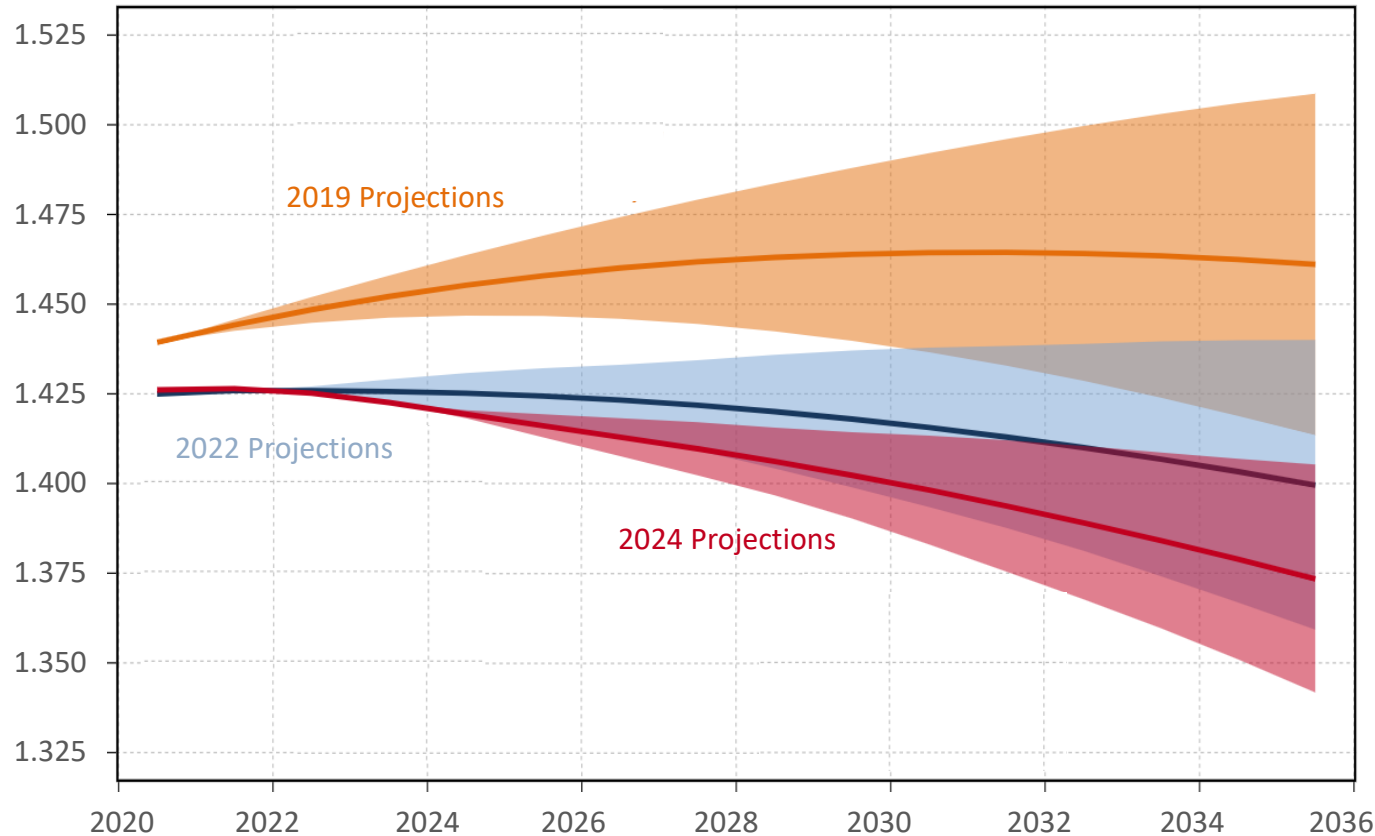
Growth in banking credit

(y/y % change, by sector)



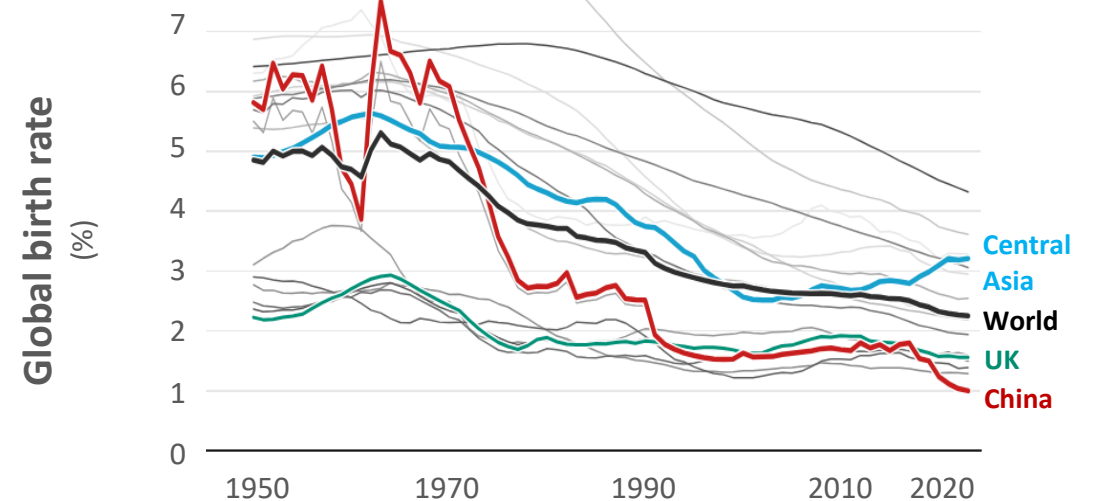
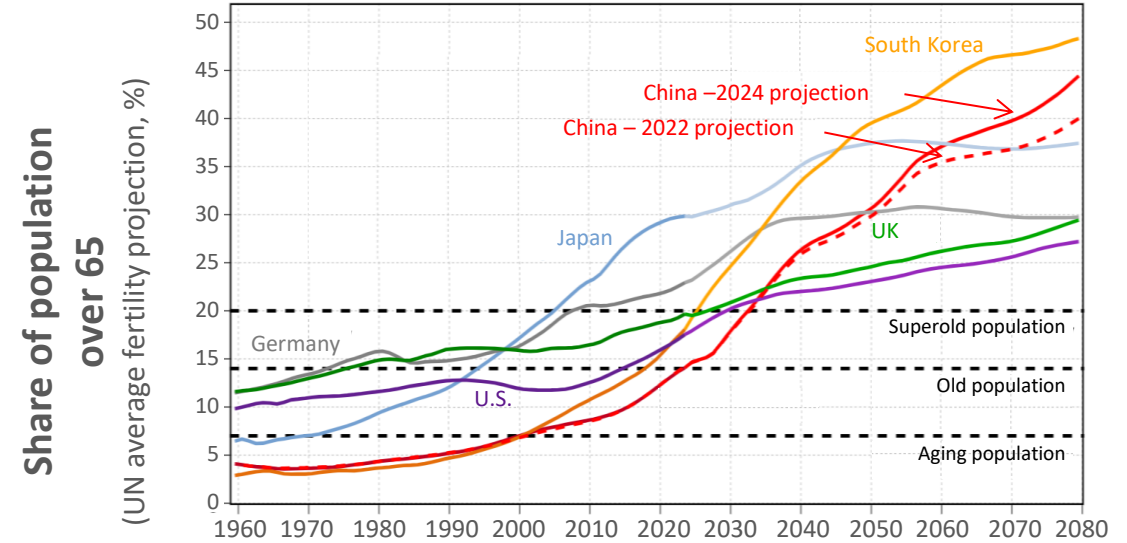
New projections indicate a more challenging demographic, with a faster decline in the population.

UN projections for China's population by date and fertility scenario*
(Number of persons, billion)



* Range of low, medium and high fertility scenarios.

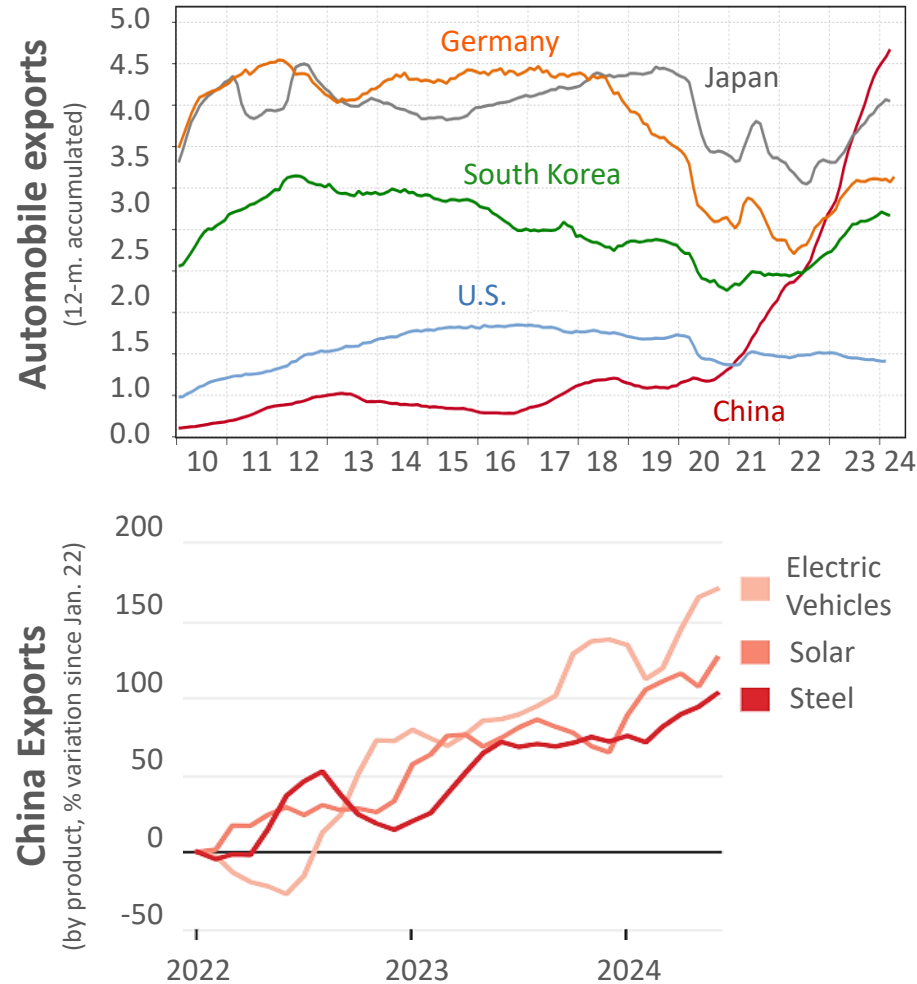
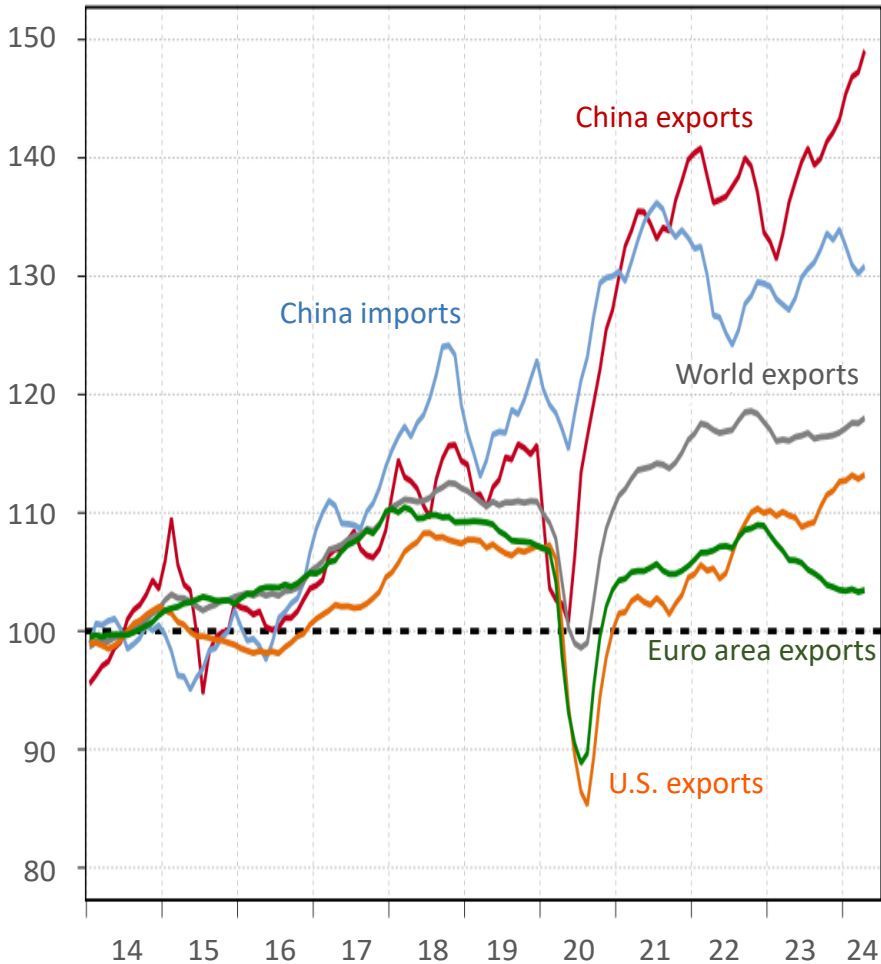
Sources: Gavekal, The Spectator.



China has been seeking a new model of economic growth, less based on domestic consumption and more on exports.

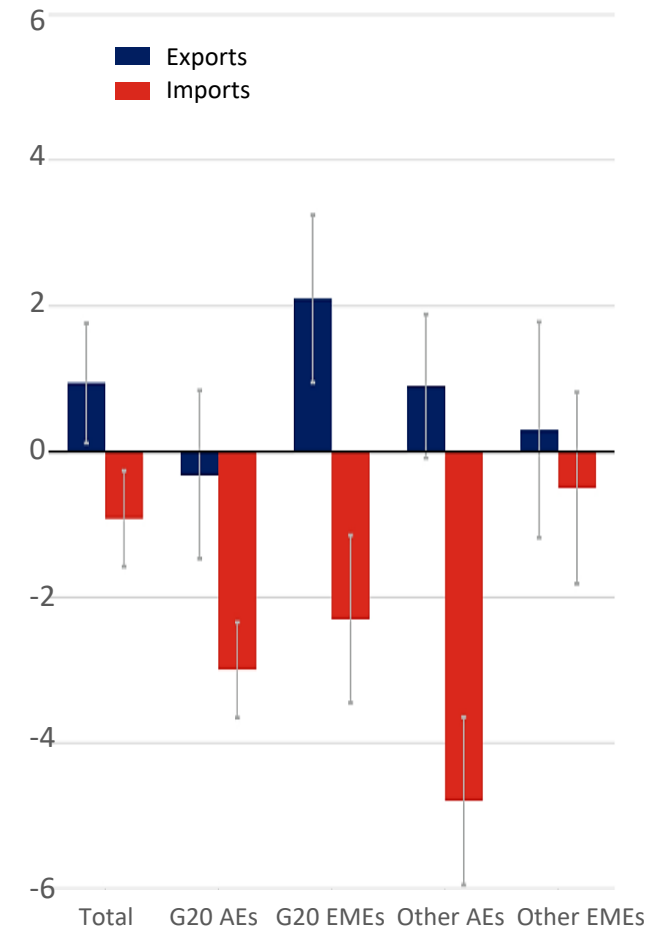
Exports

(volume, s.a., 5-m.m.a., 2014=100)



Effect of subsidies on China's foreign trade

(% var)



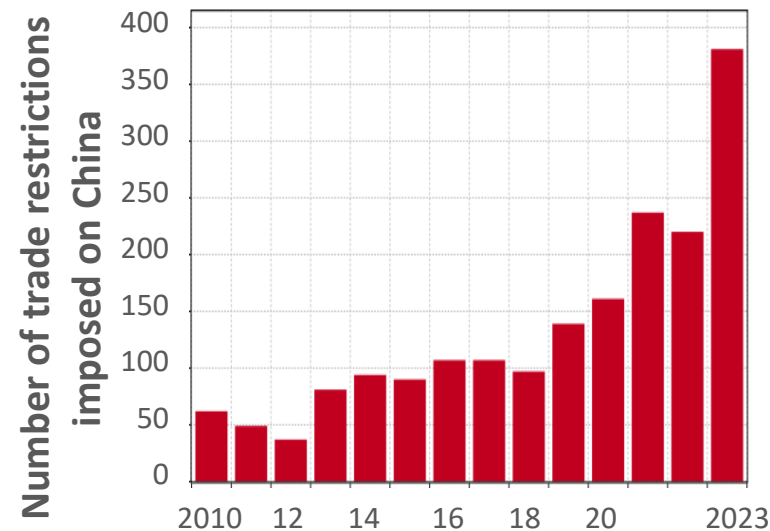
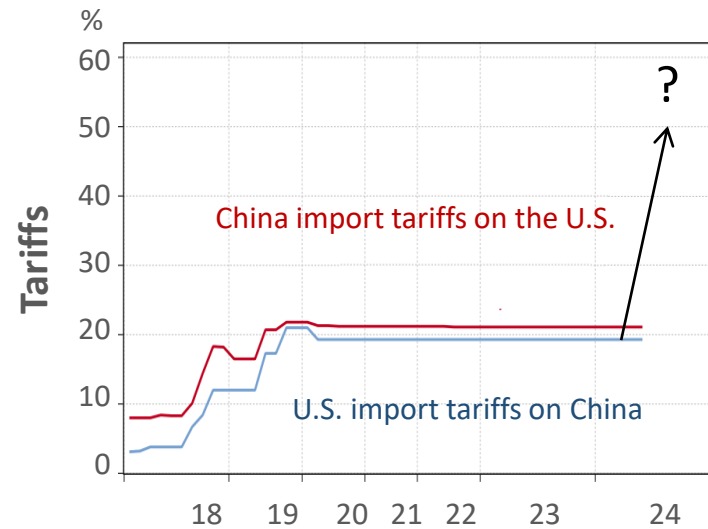
More protectionism may have a large effect on China and spill over to the global economy.

Recent changes in tariffs on China*

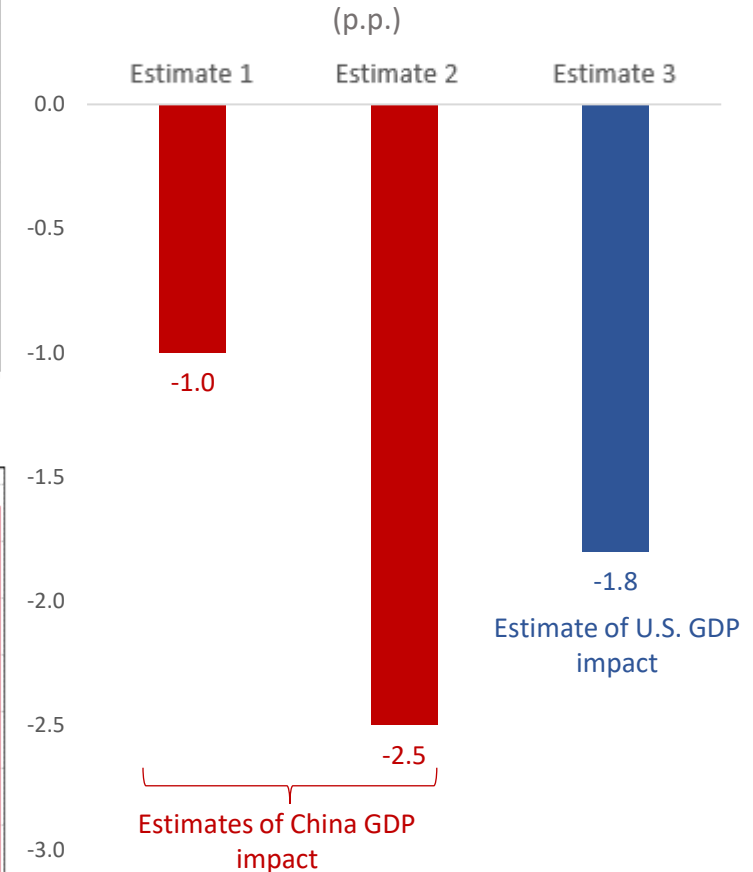
Country/region	Product	Tariff
USA	Steel, aluminum, cranes, solar cells, and other products	Increase in tariffs on steel and aluminium products from 7.5% to 25%. For solar cells, the increase is from 25% to 50%. New tariff on cranes is 50%. Other announced increases will take effect in 2026, such as on batteries (from 7.5% to 25%) and graphite (from 25%).
EU	Electric vehicles	The tariff on EVs imported from China was raised from 10% to between 27.4% and 48.1%.
Canada	EV, steel and aluminium	Tariff of 100% on electric vehicles and 25% on steel and aluminum imported from China.
Turkey	Electric vehicles	Tariff of 40% on electric vehicles imported from China.

* Other countries have opened anti-dumping investigations against China. India is examining Chinese pigments and chemicals. Japan is analyzing electrodes. UK is investigating imports of excavators and biodiesel, while Argentina and Vietnam are investigating Chinese microwave ovens and wind turbines.

Sources: WSJ, EU, Gavekal, UBS, Peterson Institute, Goldman Sachs.



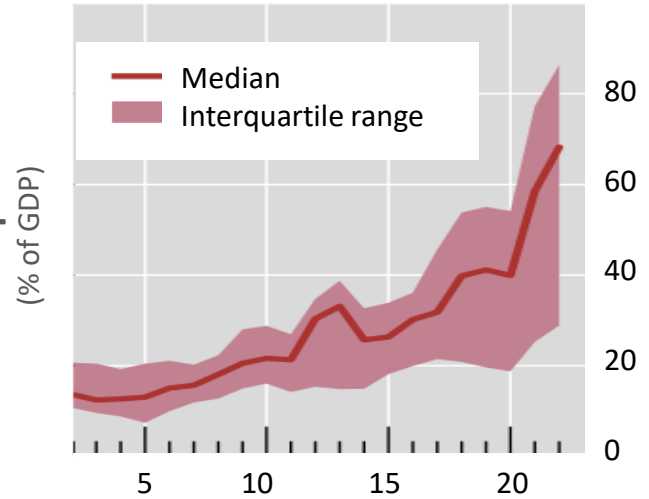
Estimates of GDP impact from hikes in import tariffs in the U.S.



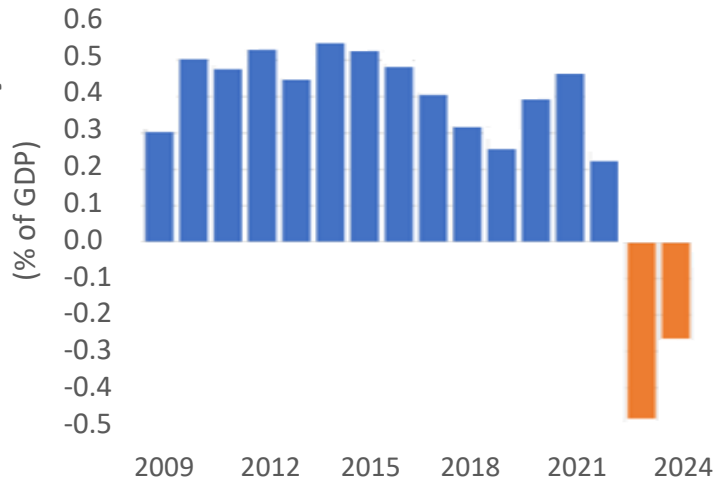
Estimate 1 (Goldman Sachs): General 10% hike and 60% hike on China
 Estimate 2 (UBS): 60% hike on China
 Estimate 3 (Peterson): General 10% hike and 60% hike on China

In a scenario of a stronger slowdown in activity, there is little room for economic policy.

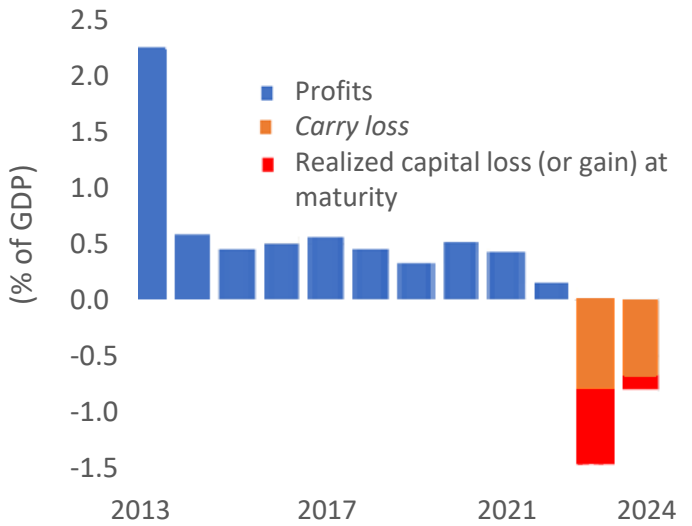
AEs: Central bank balance sheets expansion



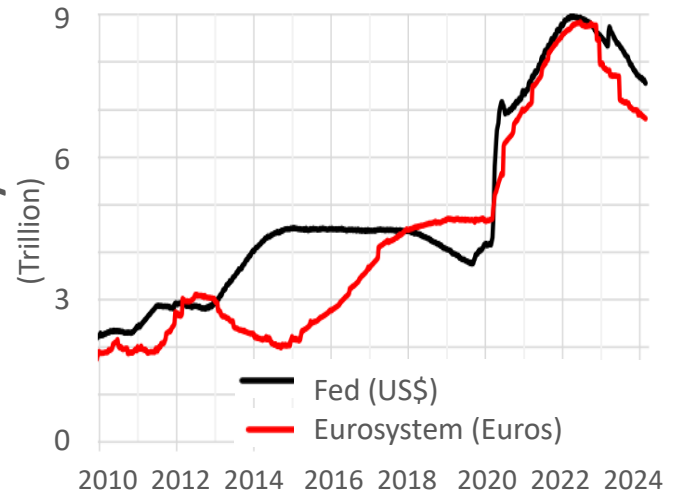
Fed transfers to the US Treasury



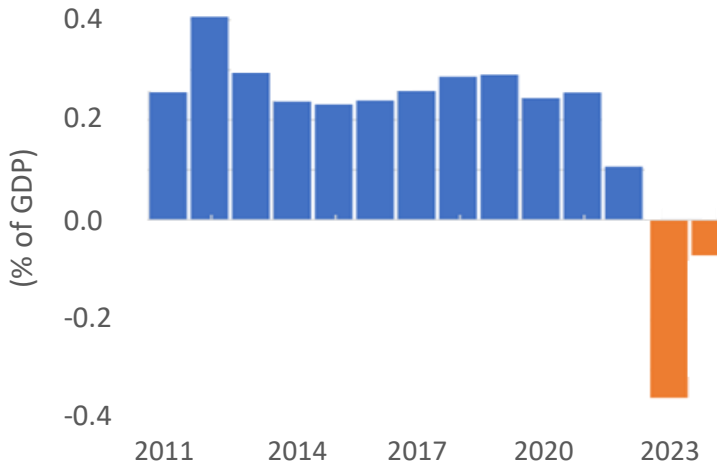
Transfers between the BoE and HM Treasury



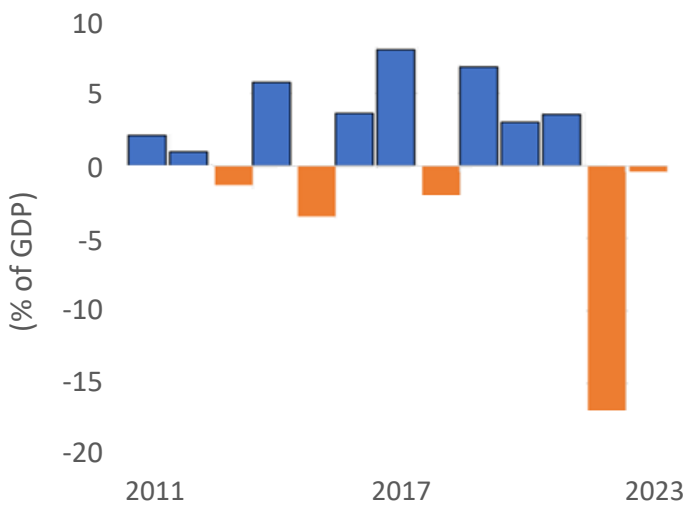
Total assets of the Fed and Eurosystem



Eurosystem profit and loss

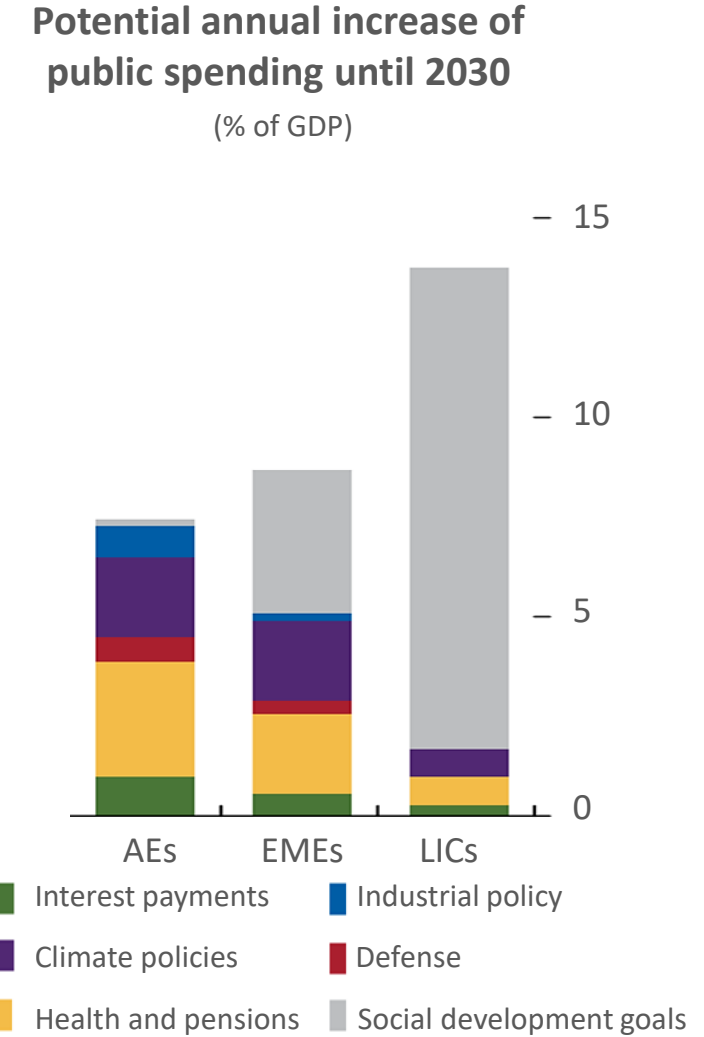
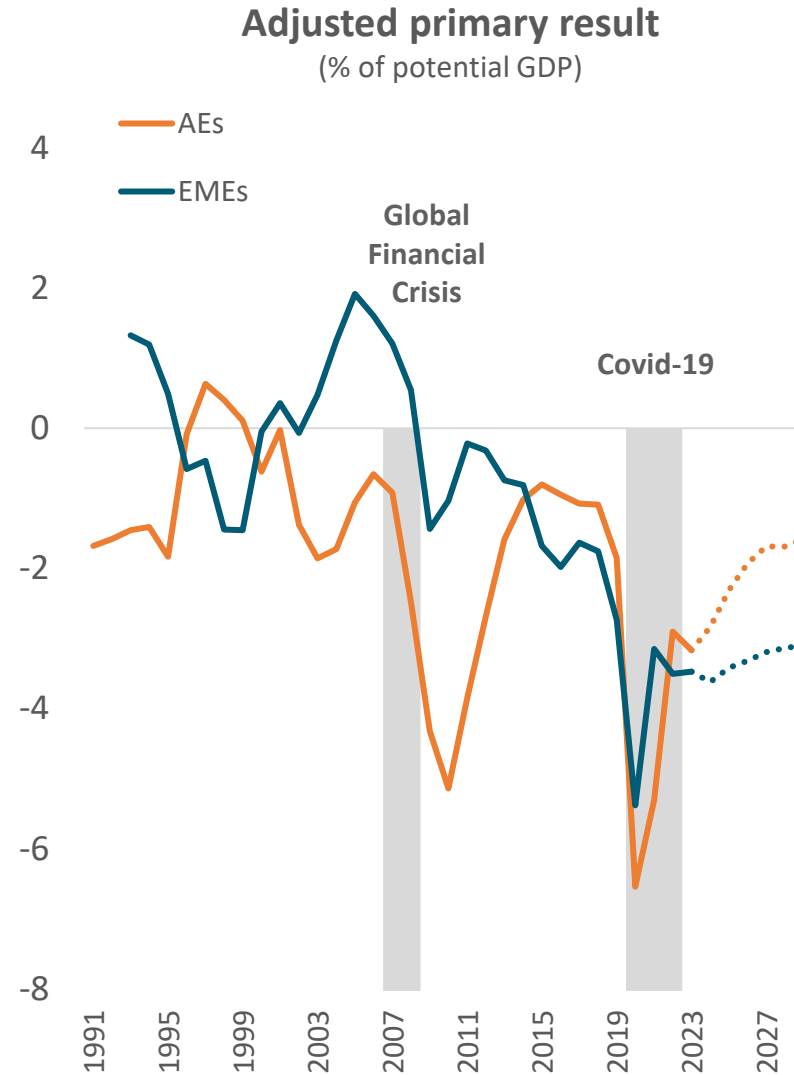
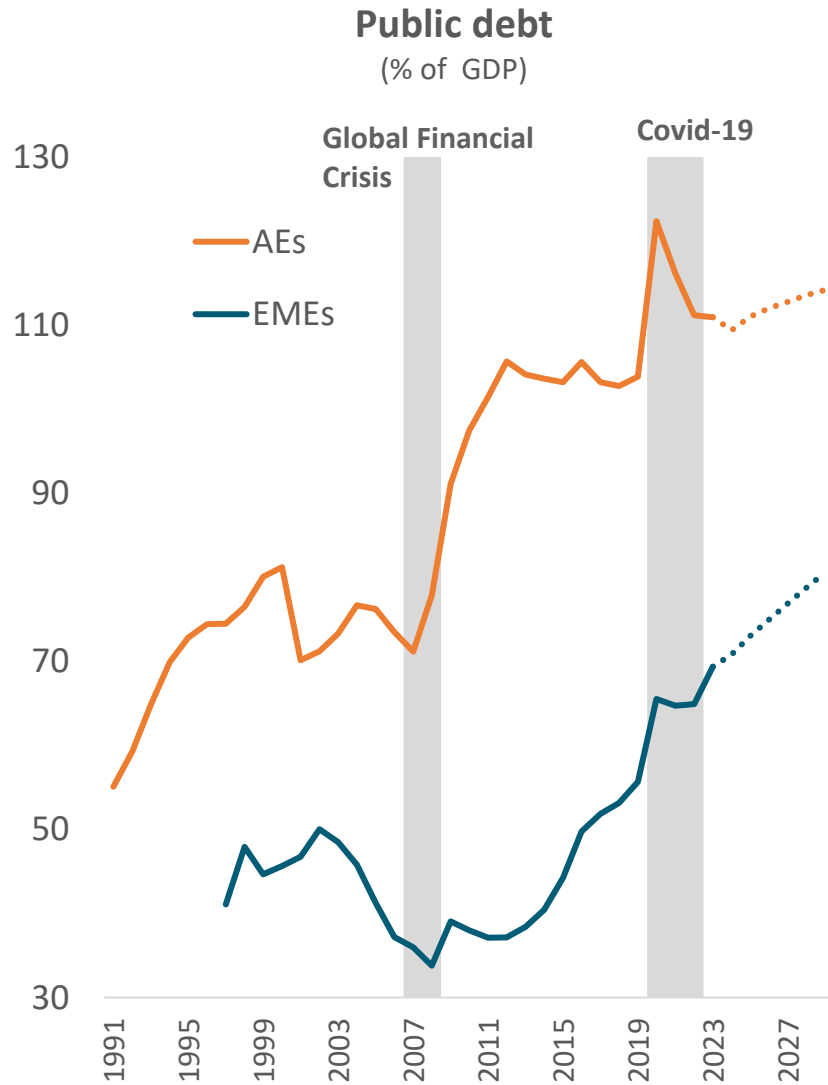


Swiss National Bank Net Income



Sources: BIS; S. Cecchetti and J. Hilscher. (2024), Fiscal Consequences of Central Bank Losses, NBER Working Paper No. 32478

In case of economic hard landing, there is little room for economic policy.

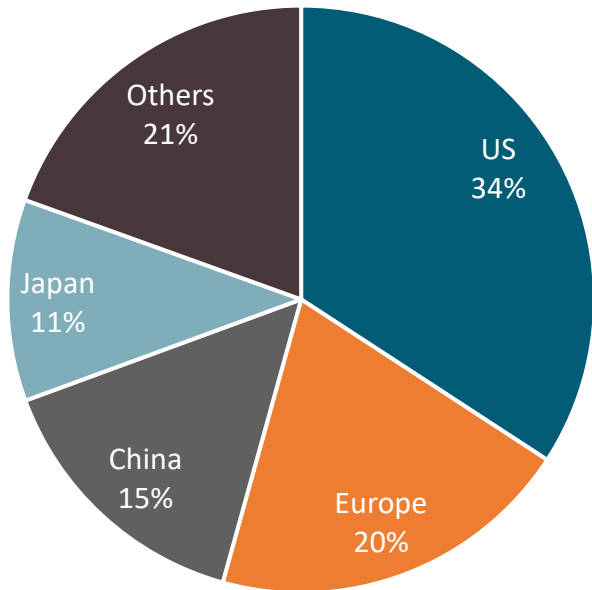


Source: IMF.

Increasing debt amount and costs in AEs will demand more and more resources.

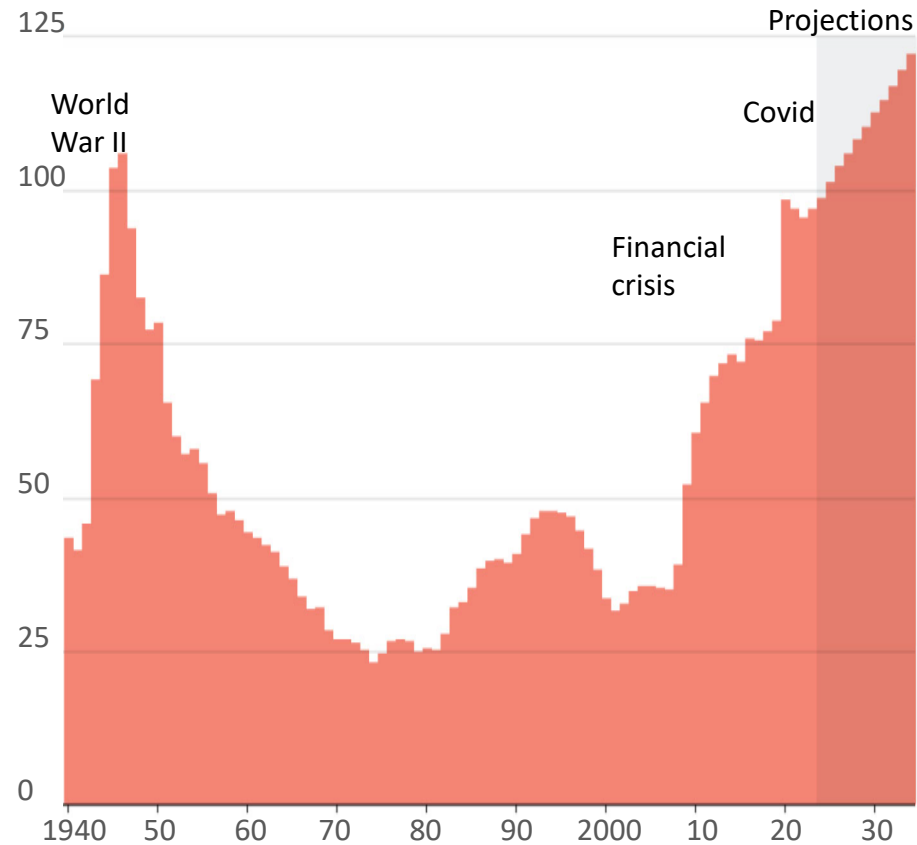
Global public debt

(% of countries' GDP)



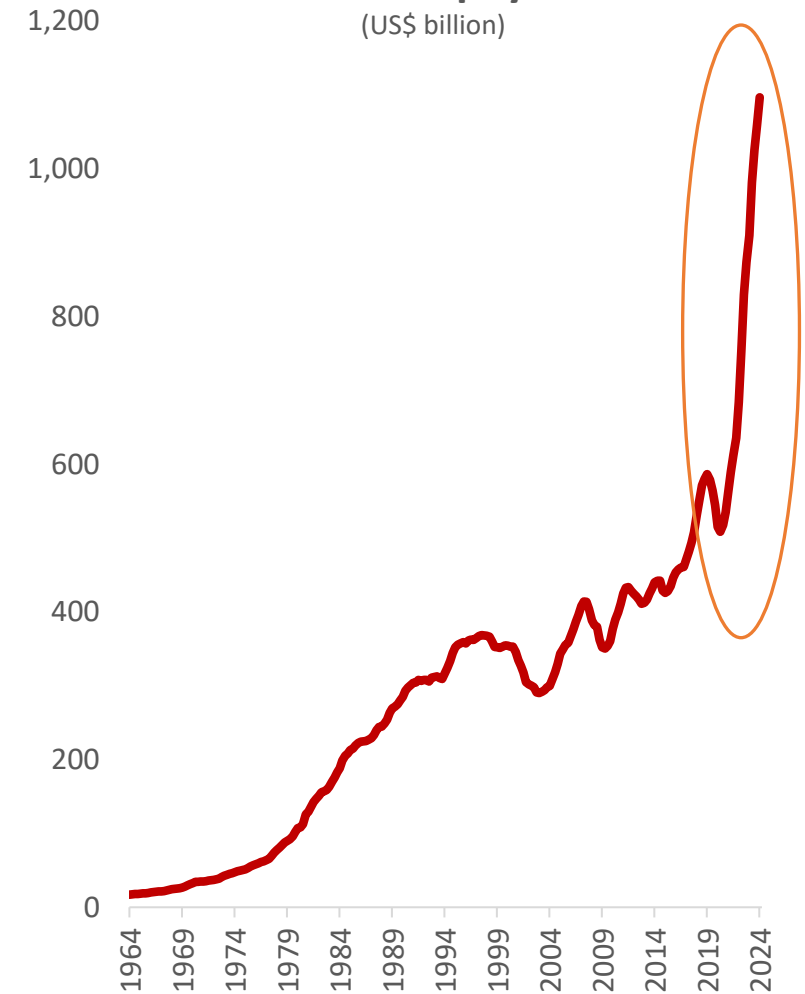
US: public debt

(% of GDP)



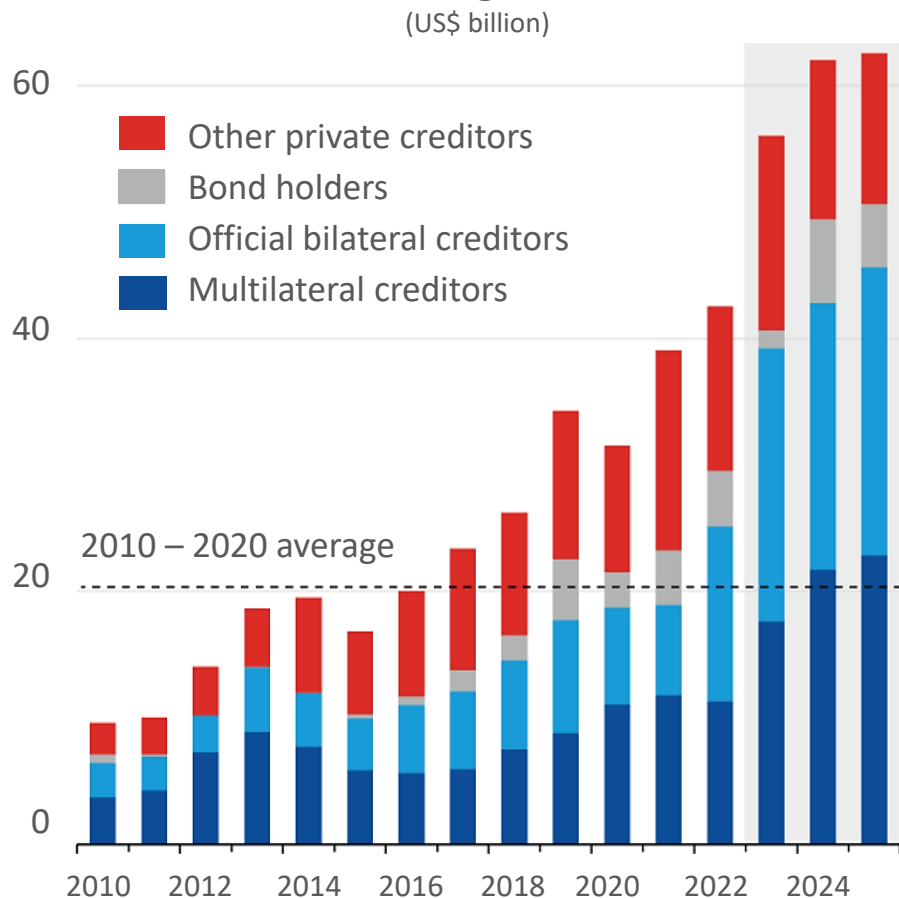
US: interest payments

(US\$ billion)



Debt service costs have been rising rapidly. Current refinancing needs are three times higher than the historical average. Reduction in EMDEs issuance.

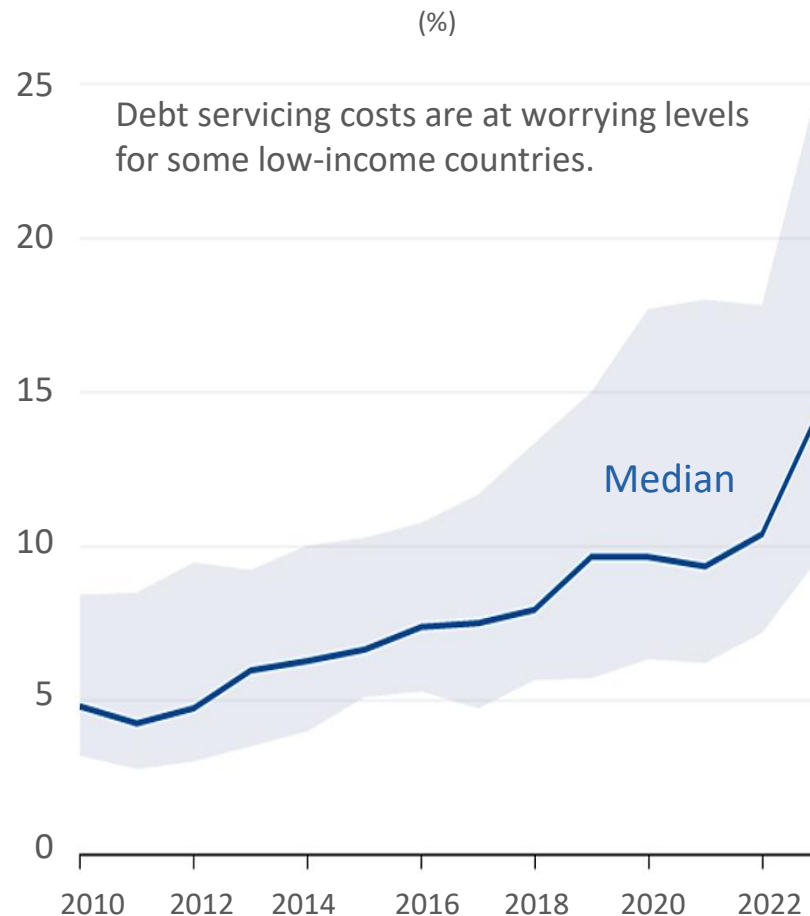
Low-income countries: principal payments due to foreign creditors
(US\$ billion)



* Figures for 2023 and beyond are projections.

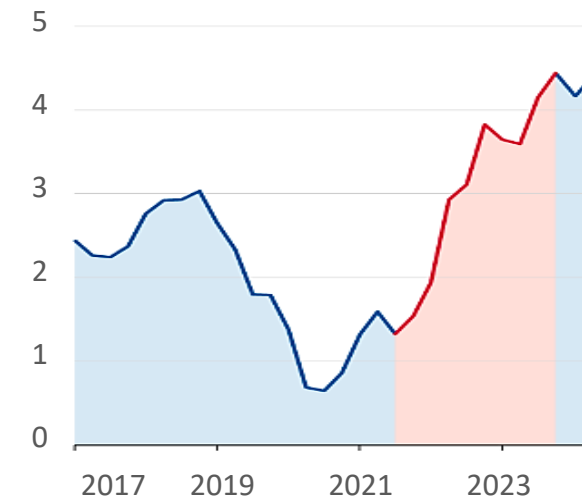
Sources: IMF, World Bank.

Low-income countries: External debt service to revenues
(%)

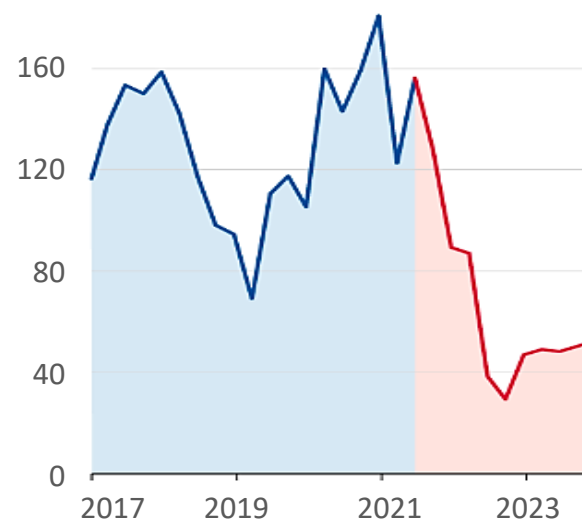


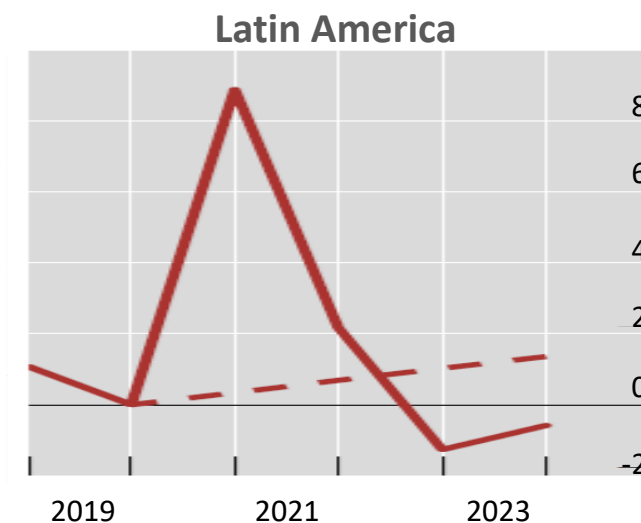
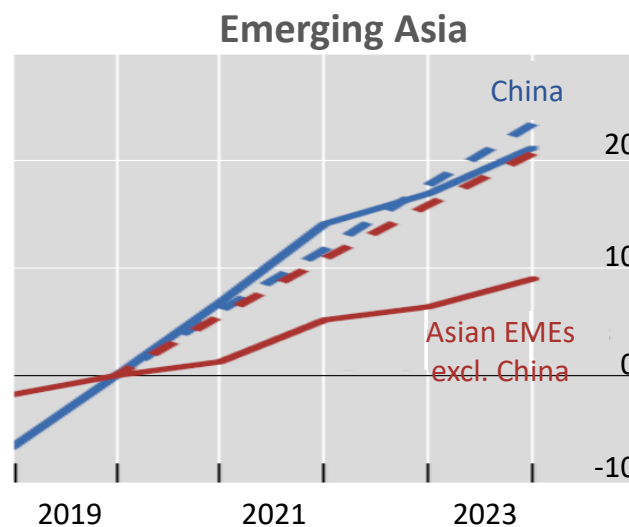
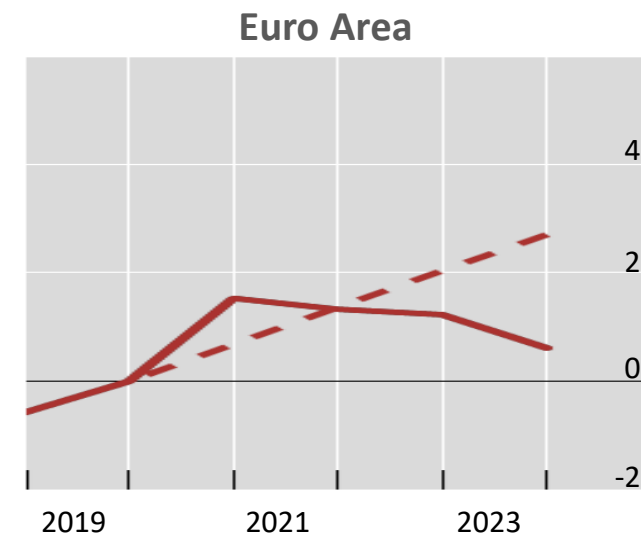
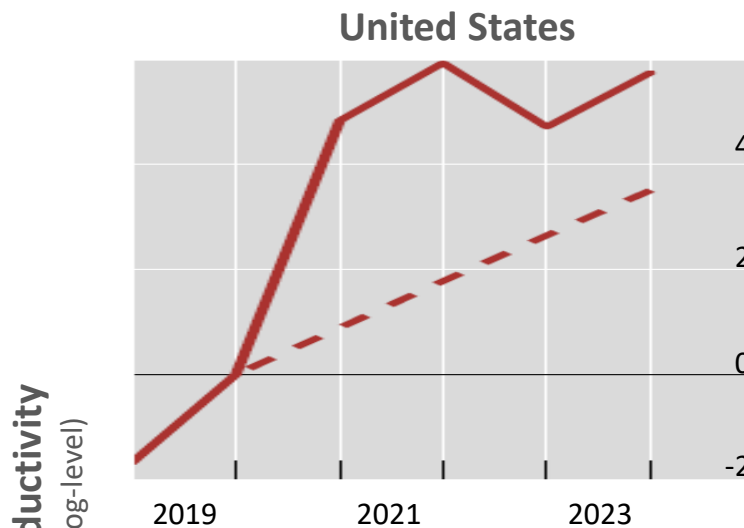
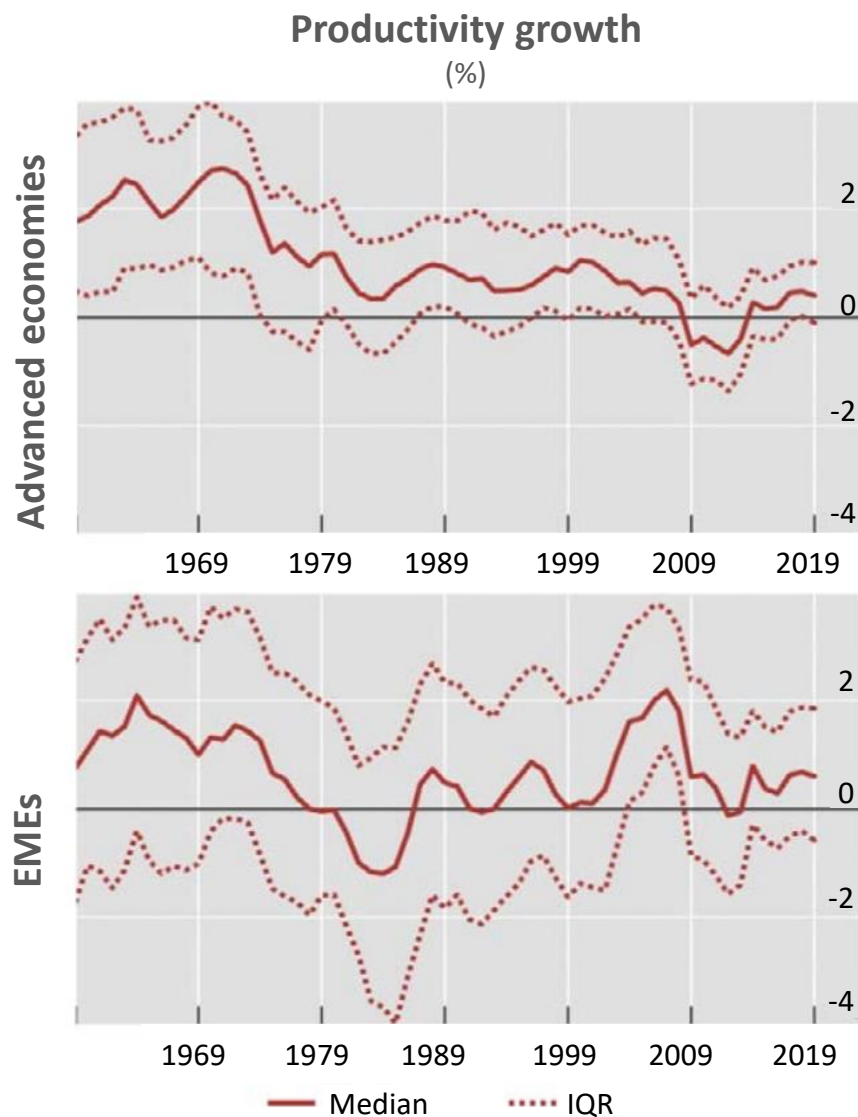
* Figures for 2023 are projections. Shaded area represents the interquartile range.

US: 10-year Treasury yield
(%)



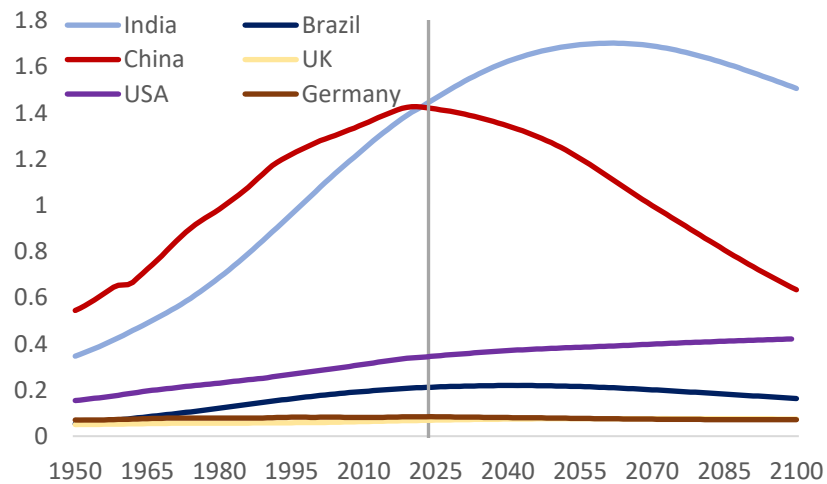
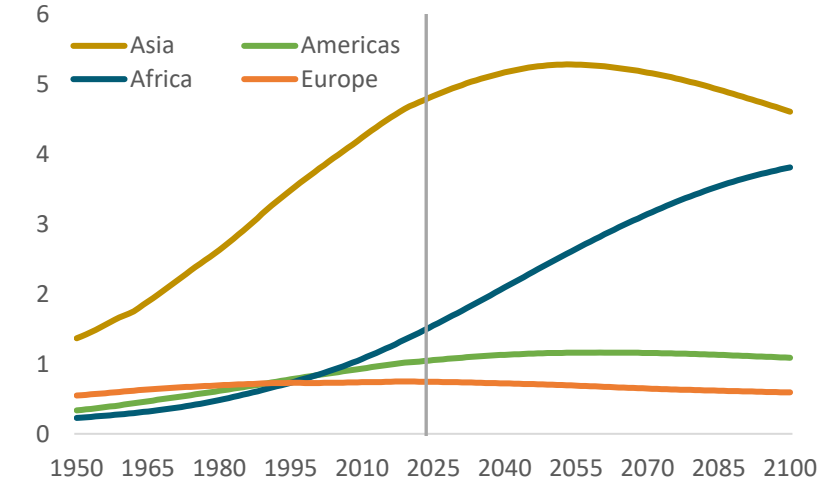
EMDEs: Eurobonds net issuance
(US\$ billion, 4-quarter rolling sum)





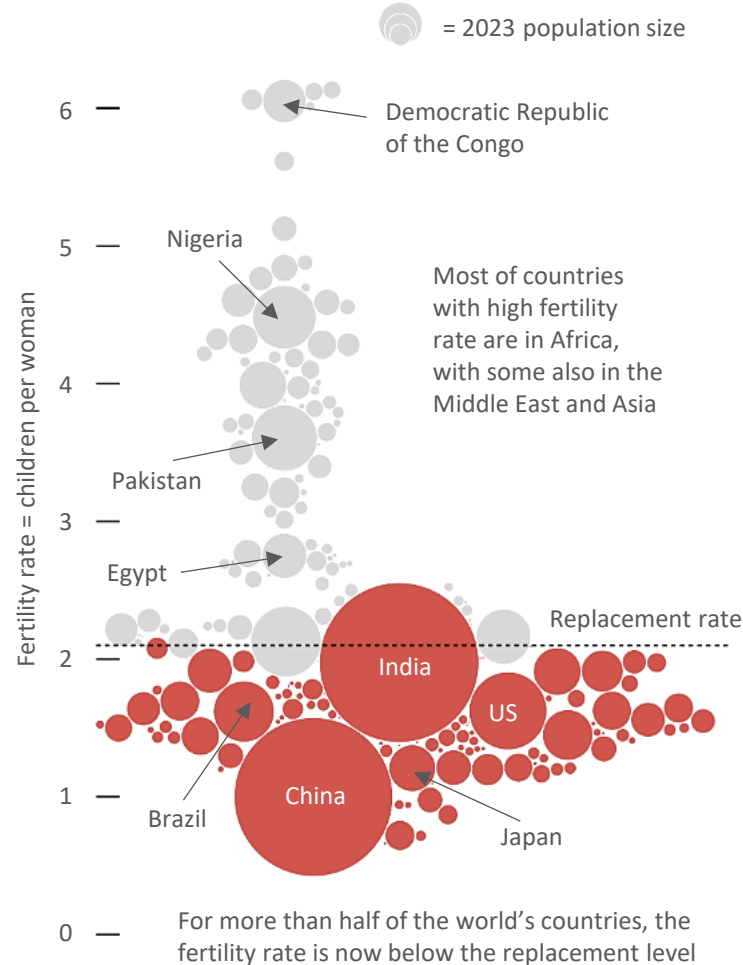
Total population

(historical and projections, billion)



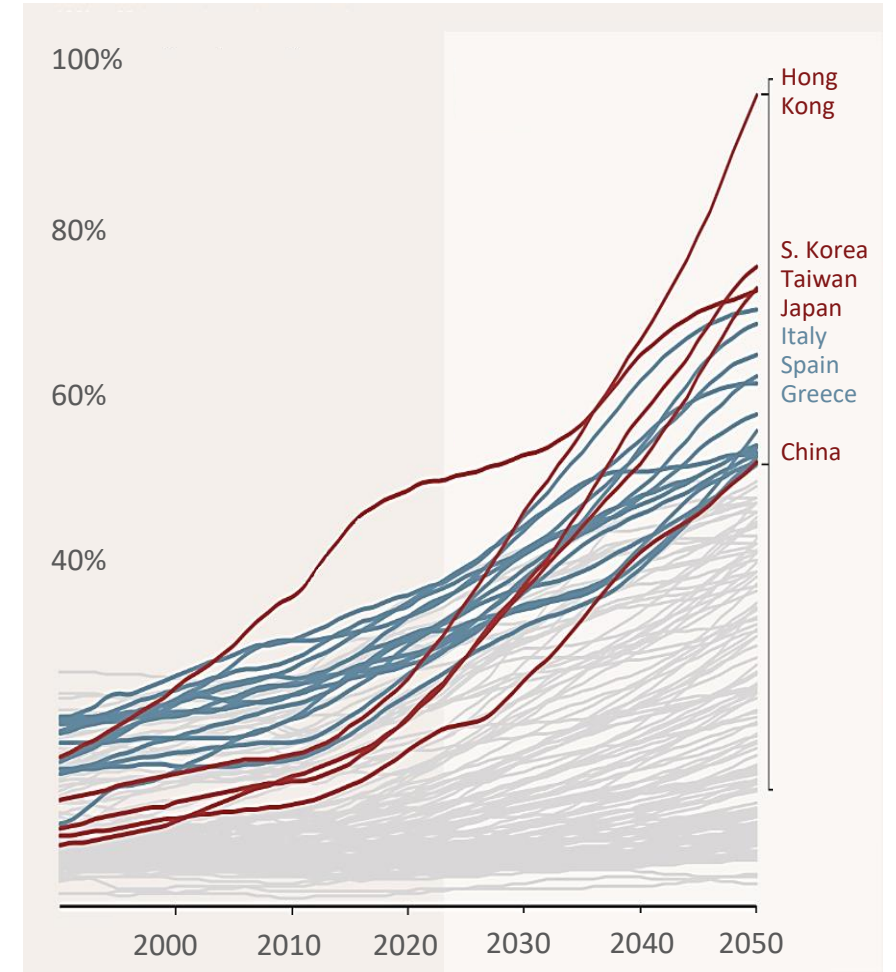
Total fertility rate

(2023)

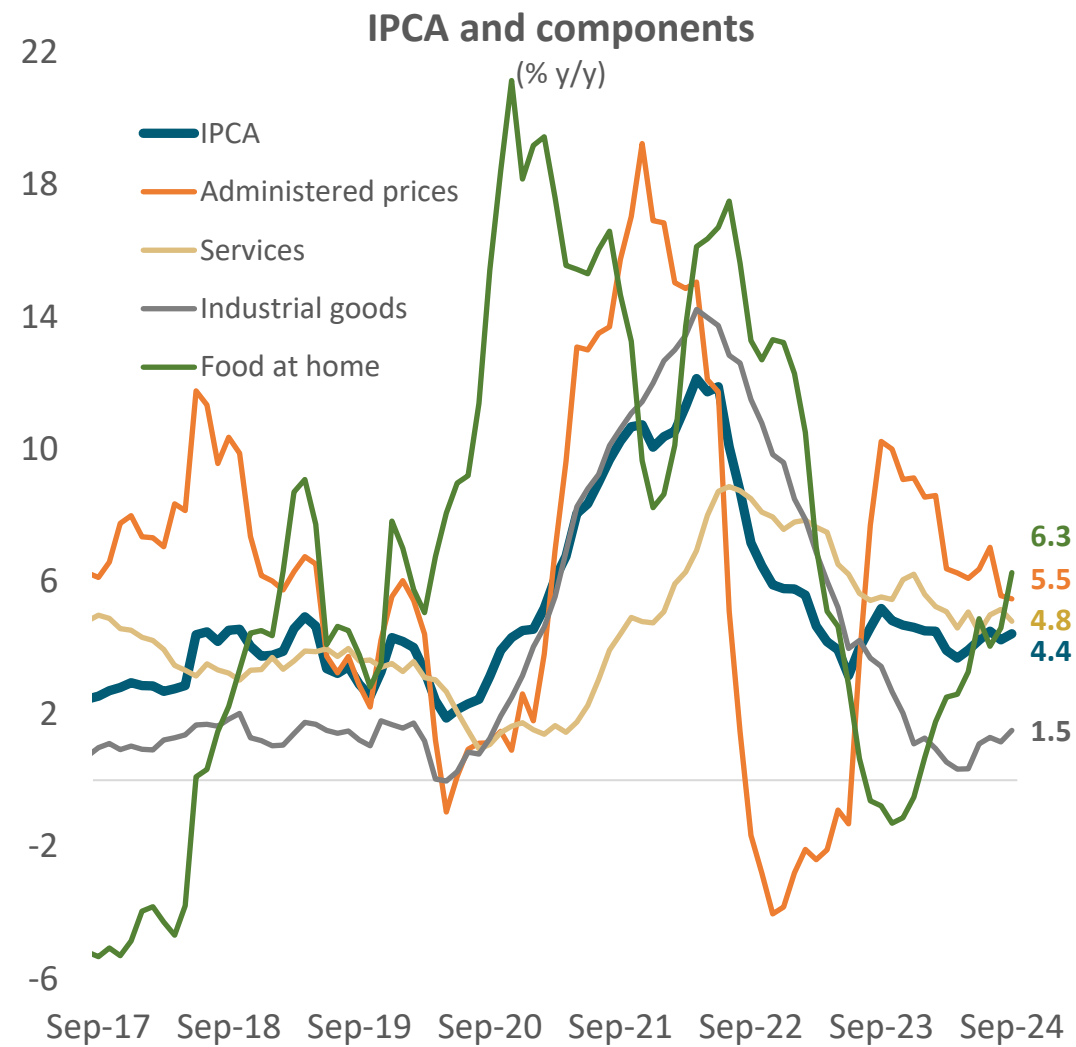
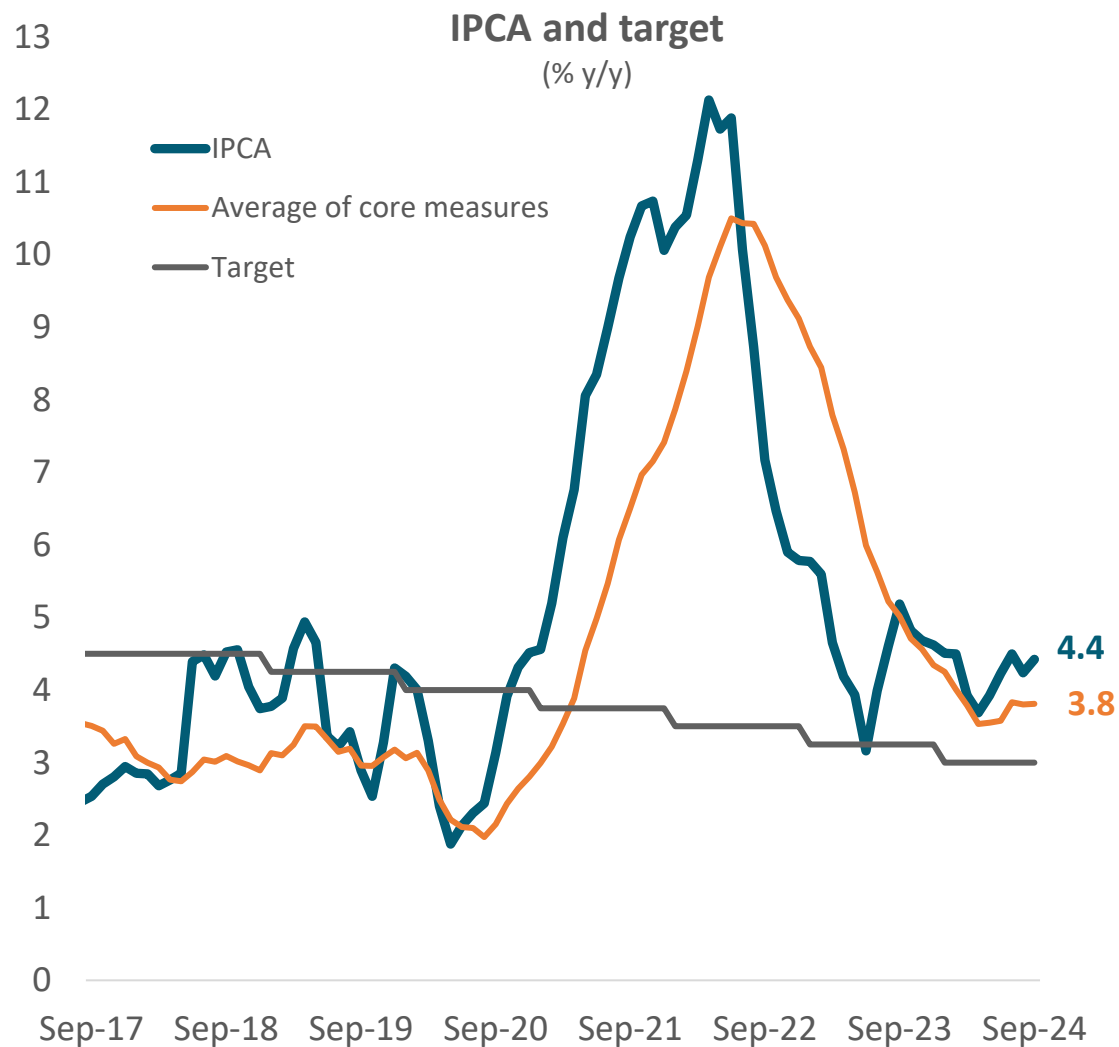


For more than half of the world's countries, the fertility rate is now below the replacement level

Old-age dependency ratio

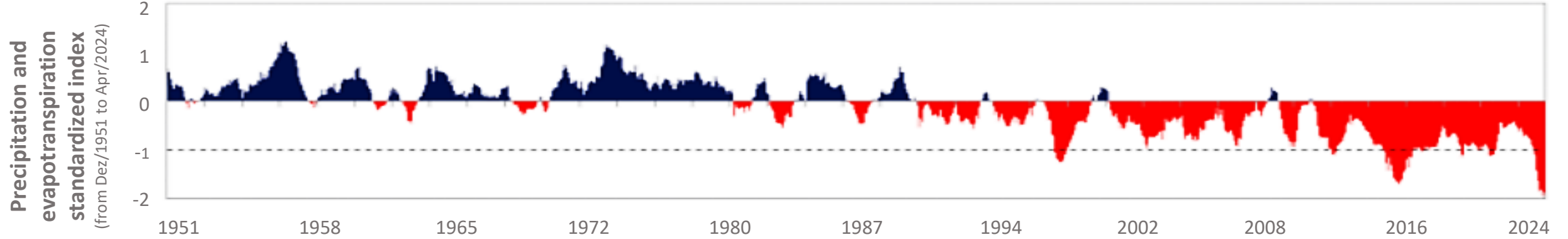


Headline inflation and measures of underlying inflation are above the target in recent releases.

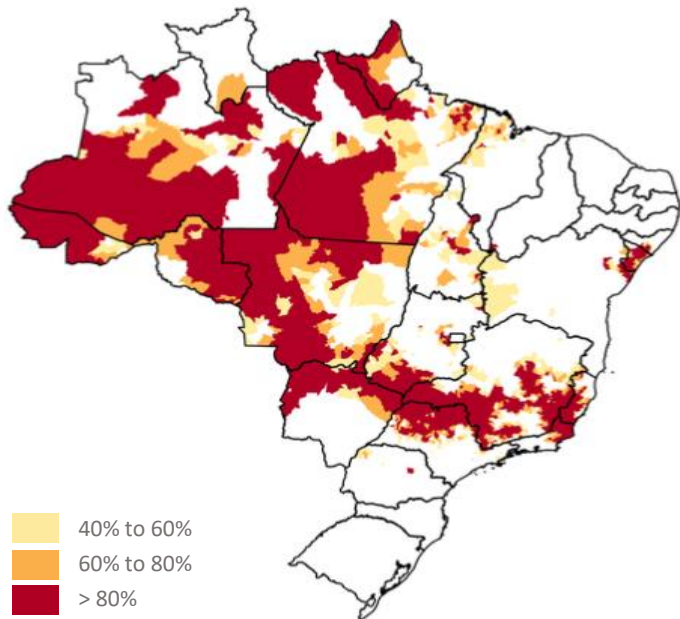


Sources: IBGE and BCB

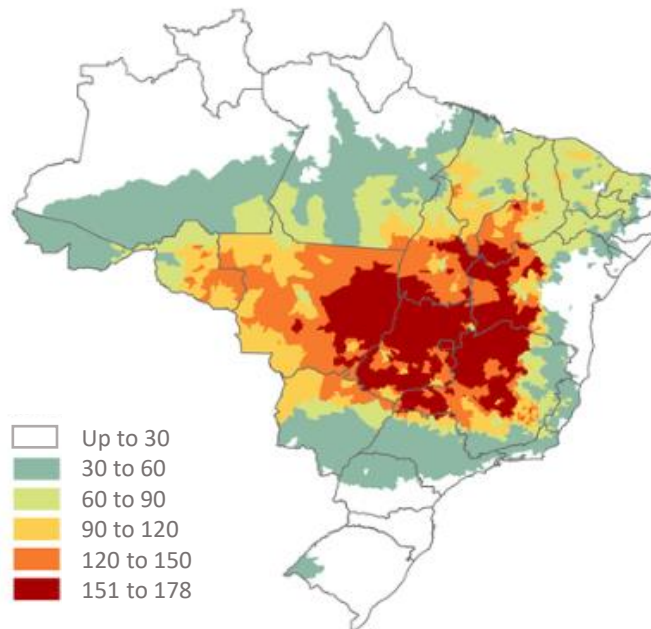
Drought in Brazil is a risk for food and energy prices.



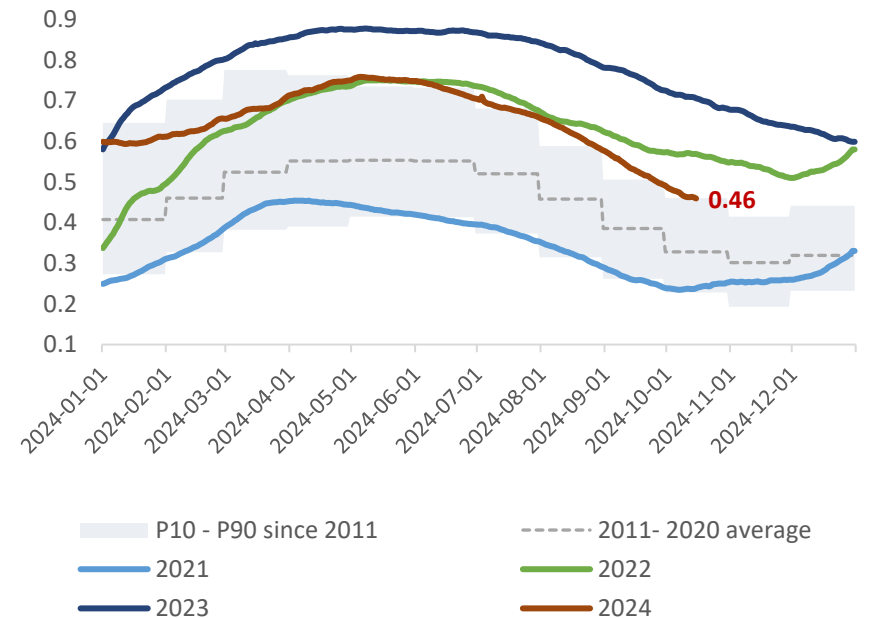
Municipality area affected by the drought
(% of agricultural production area, September)



Consecutive days with no rain
(Up to October 1st)

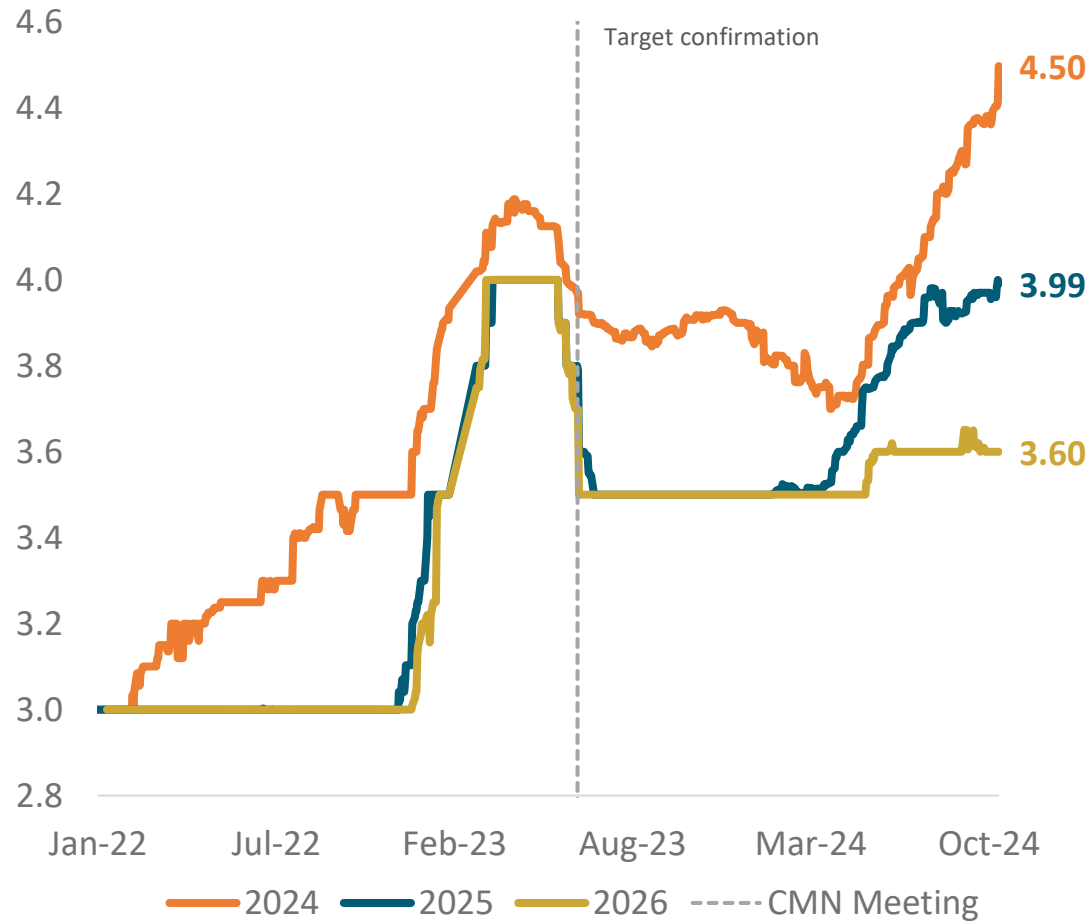


Energy stored in reservoirs
(% SIN)



Inflation expectations unanchored.

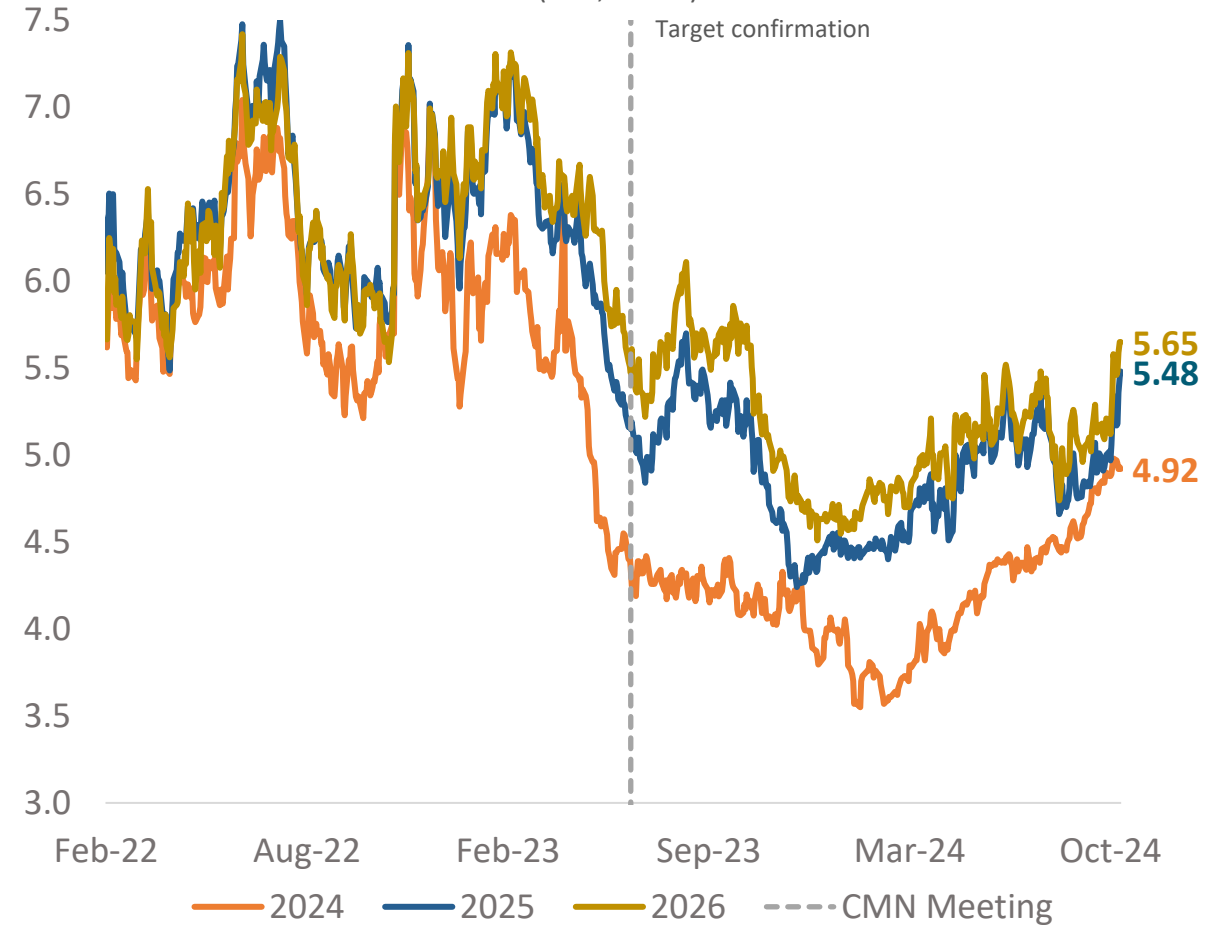
Inflation expectation
(% YoY, Focus*, median)



• Updated until 10/18/2024

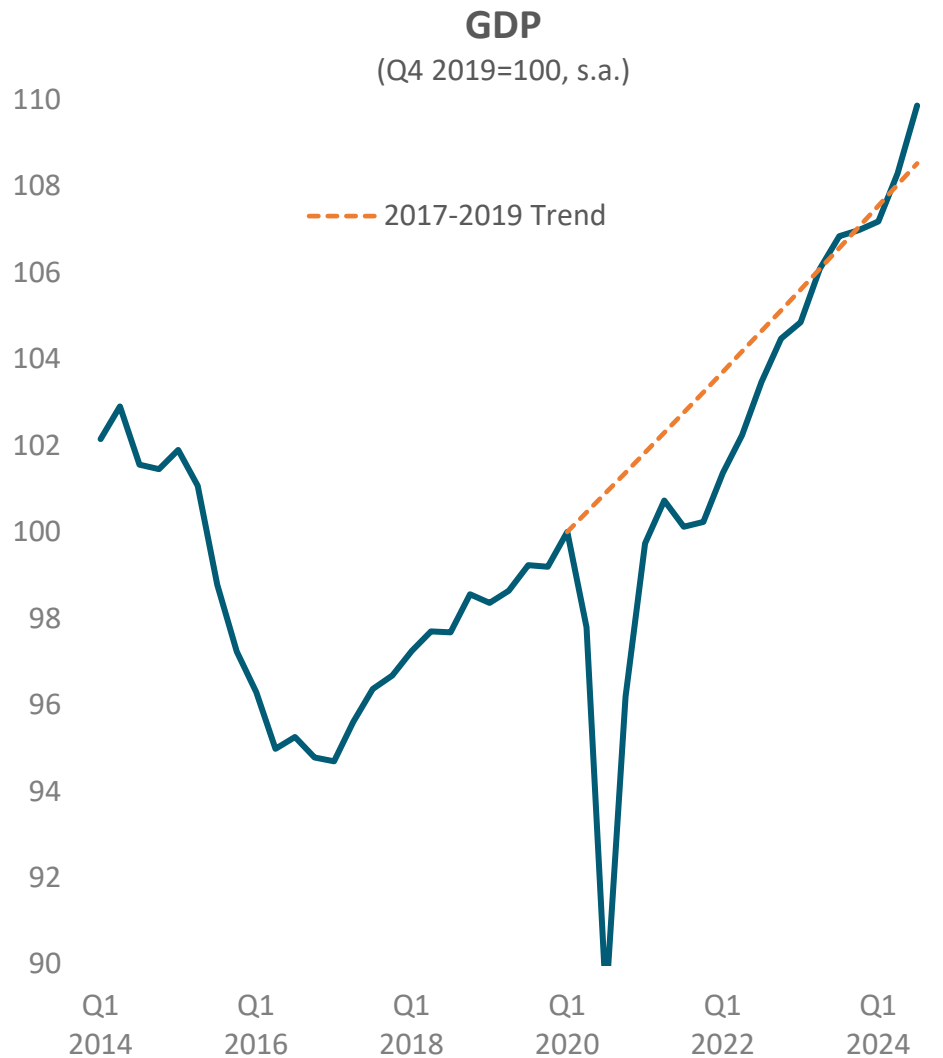
Source: BCB

Break-even inflation
(DAP, % YoY)



• Updated until 10/18/2024

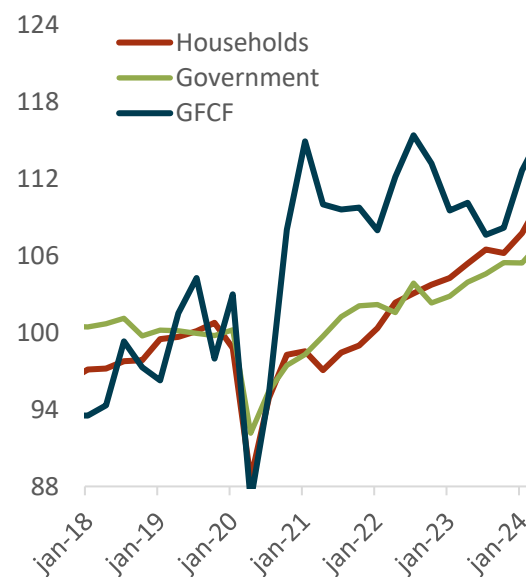
GDP growth pace higher than the 2017-19 trend. Growth remains robust and widespread, with emphasis on cyclical components.



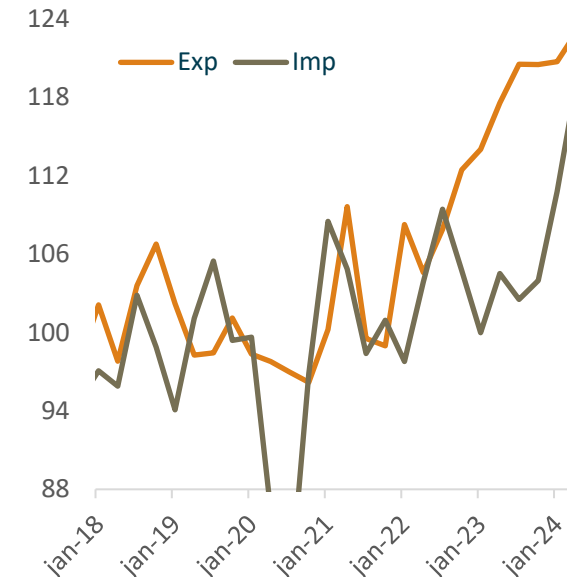
Sources: IBGE, Broadcast.

GDP: Demand components

(2019=100 s.a.)



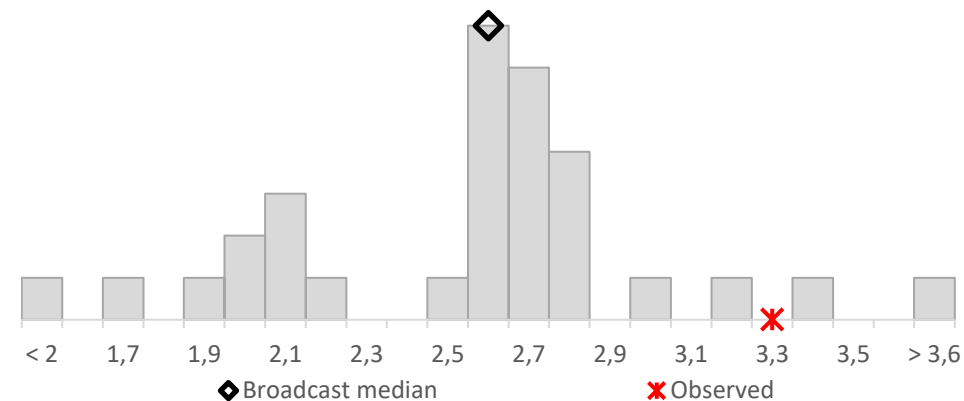
(2019=100 s.a.)



Distribution of projections

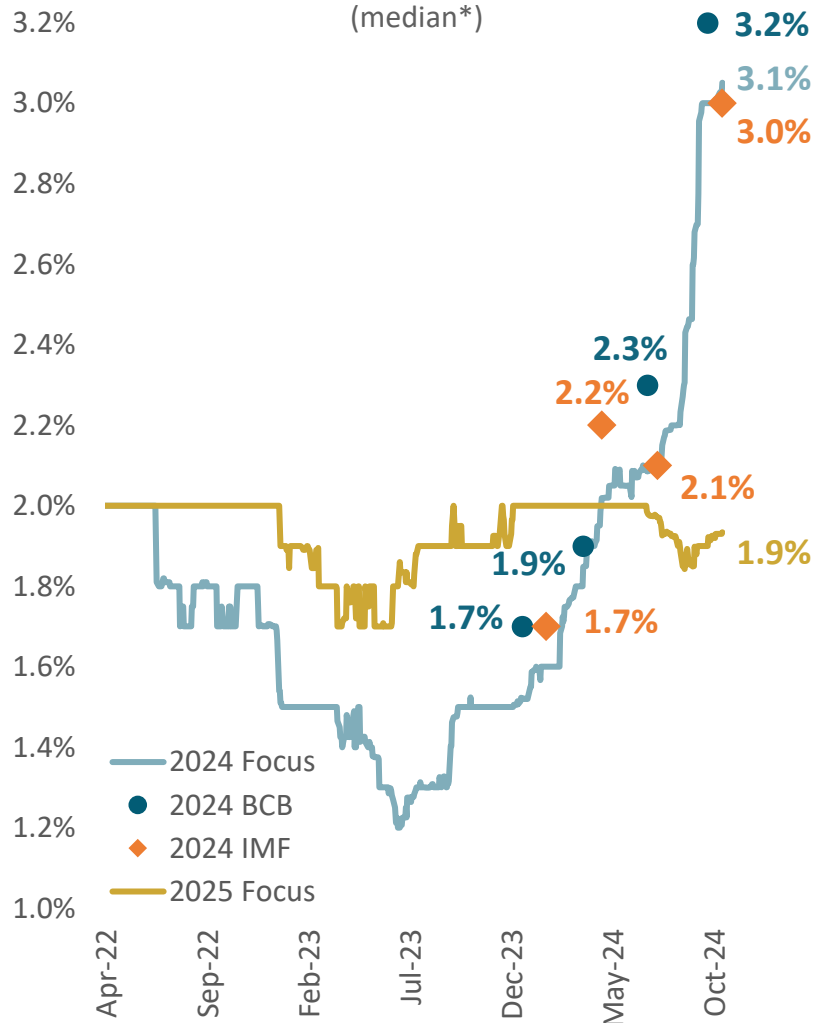
2024:2T GDP

(Broadcast participants, YoY %)



Indicators of economic activity and labor market keep showing greater dynamism than expected.

GDP expectations (median*)



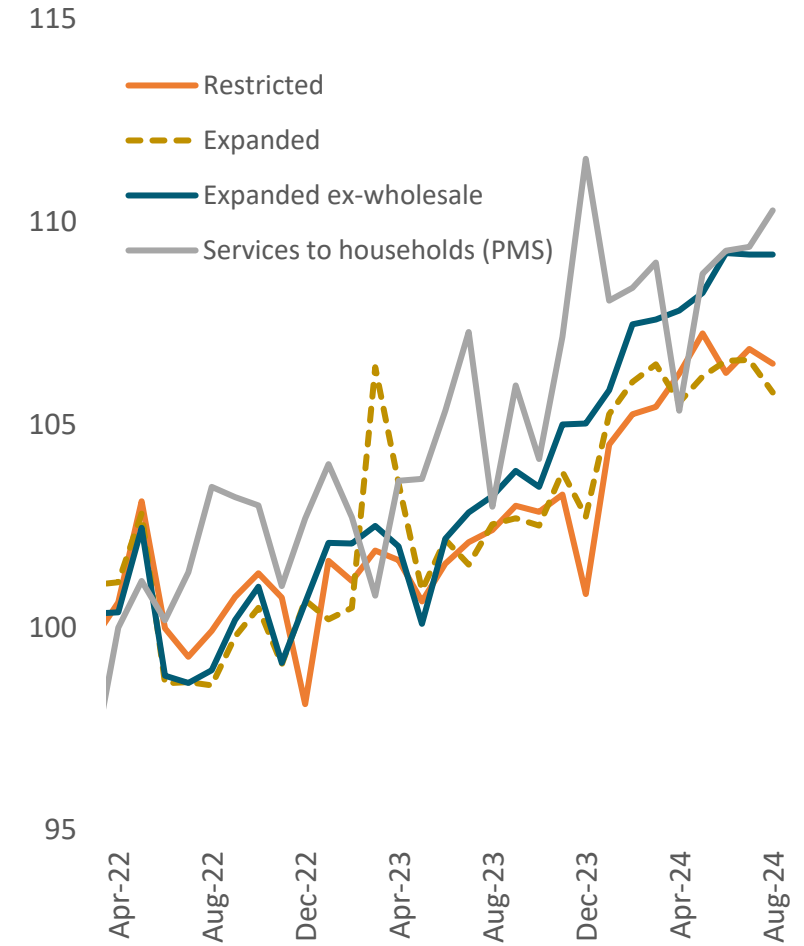
IBC-Br

(Feb/20=100, s.a.)



Retail and services to households

(PMC and PMS, 2022=100, s.a.)



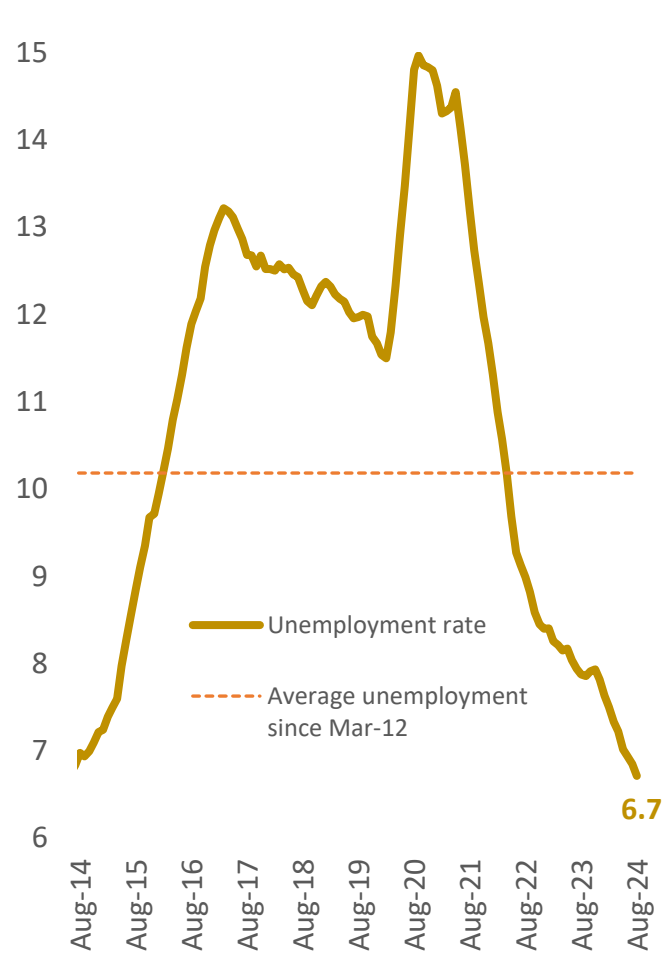
Sources: IBGE, Focus.

* Updated until Oct 18, 2024

Indicators of economic activity and labor market keep showing greater dynamism than expected.

Unemployment rate

(quarterly, %, s.a.)



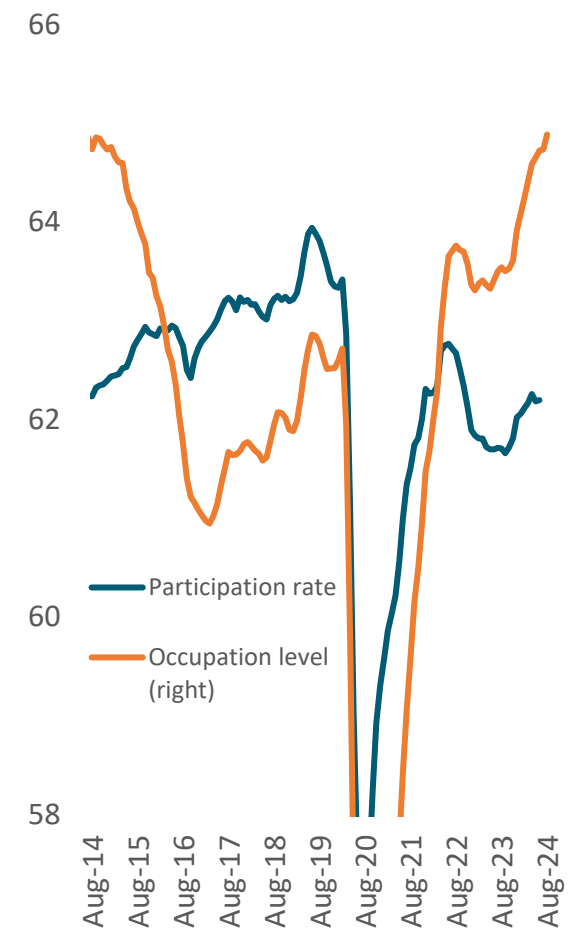
Unemployment rate and market forecasts*

(%)



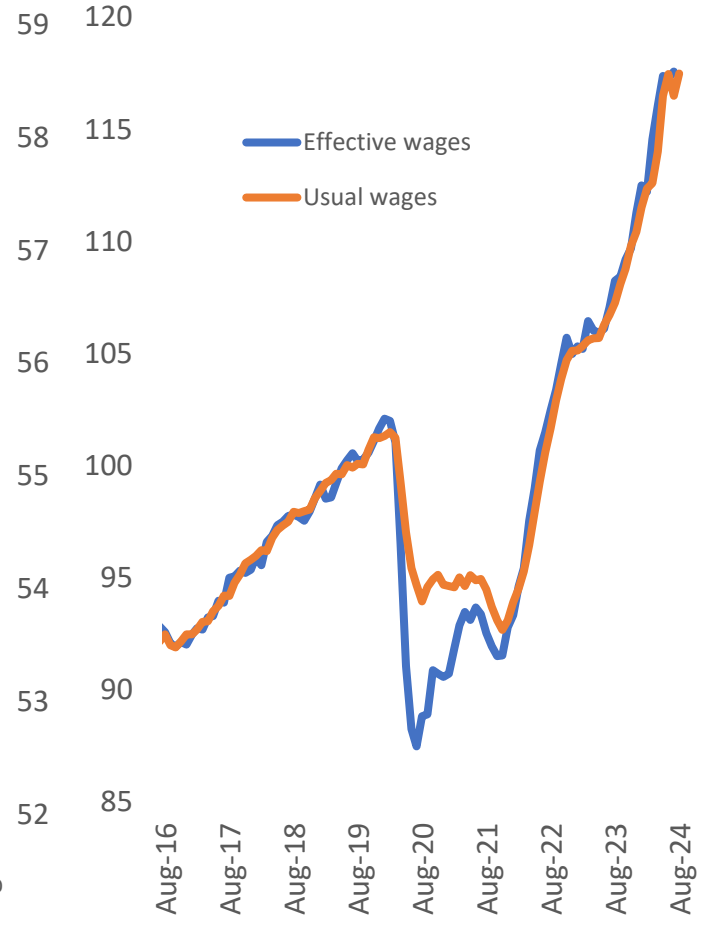
Participation rate and occupation level

(quarterly, %, s.a.)



Aggregate real earnings

(2019 = 100 quarterly, s.a.)

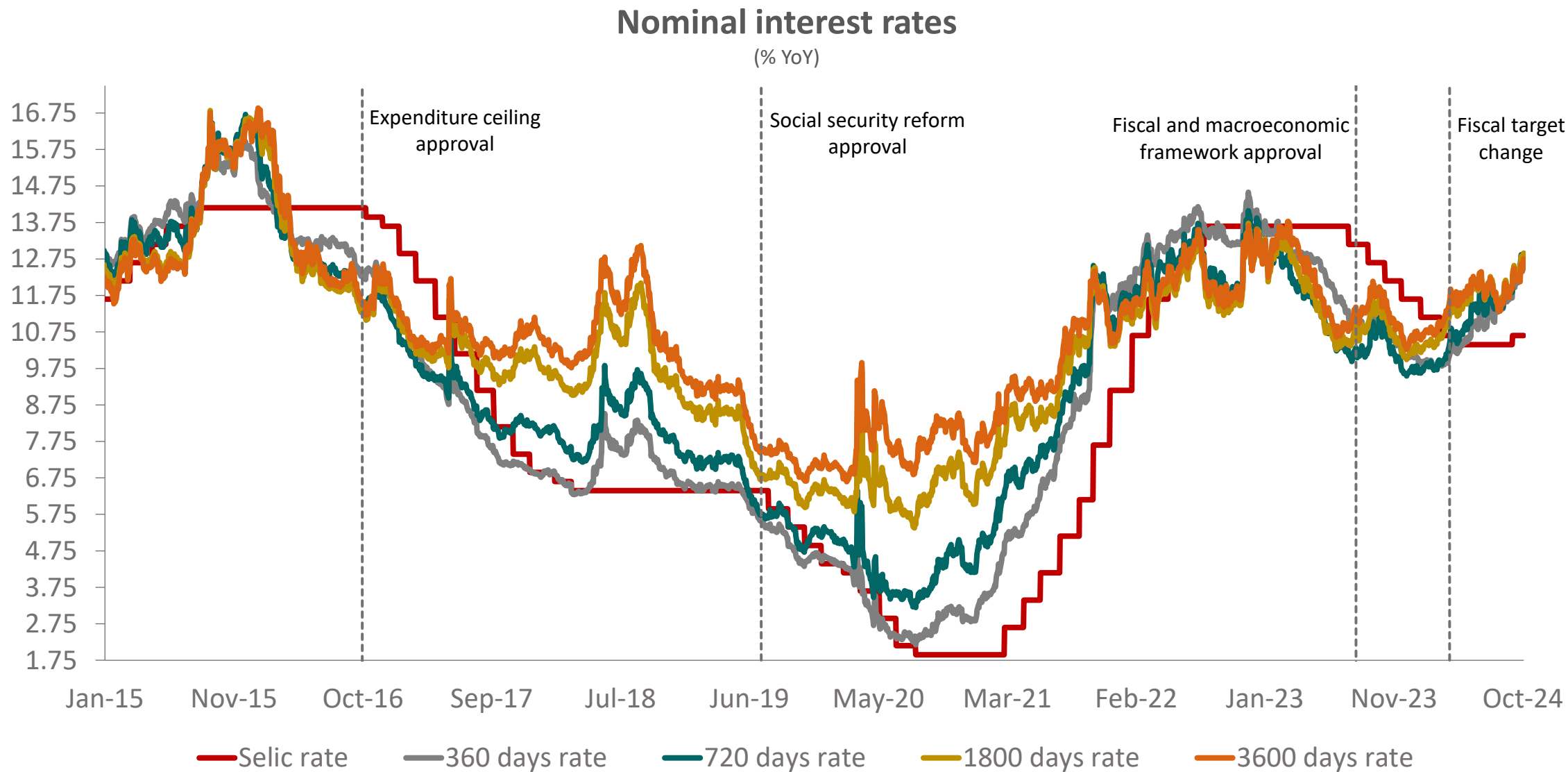


Sources: IBGE, MTE.

* Updated until Oct 11, 2024

265th Copom meeting – September 2024

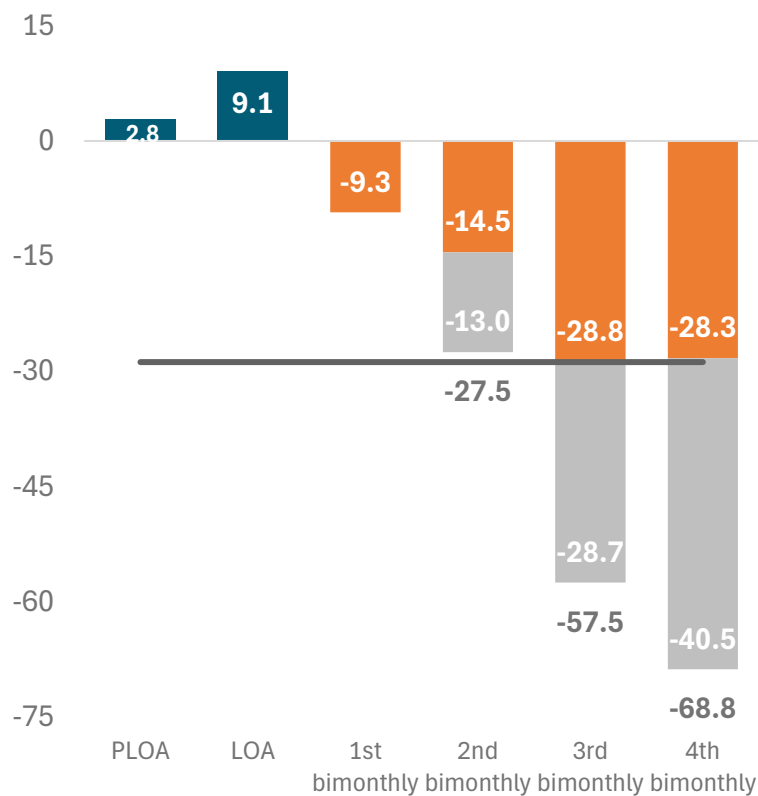
- The Committee monitors closely how the recent developments on the fiscal side impact monetary policy and financial assets. The perception of agents about the fiscal scenario, coupled with other factors, has also impacted asset prices and expectations.
- The Committee stresses that a credible fiscal policy, committed to debt sustainability, contributes to the anchoring of inflation expectations and to the reduction in the risk premia of financial assets, therefore impacting monetary policy.
- Considering the evolution of the disinflationary process, the assessed scenarios, the balance of risks, and the broad array of available information, Copom unanimously decided to increase the Selic rate by 0.25 p.p. to 10.75% p.a., and judges that this decision is consistent with the strategy for inflation convergence to a level around its target throughout the relevant horizon for monetary policy.
- The pace of future adjustments of the interest rate and the total magnitude of the cycle that just started will be determined by the firm commitment of reaching the inflation target and will depend on the inflation dynamics, especially the components that are more sensitive to monetary policy and economic activity, on the inflation expectations, on the inflation projections, on the output gap, and on the balance of risks.



National Treasury forecast for 2024

primary result

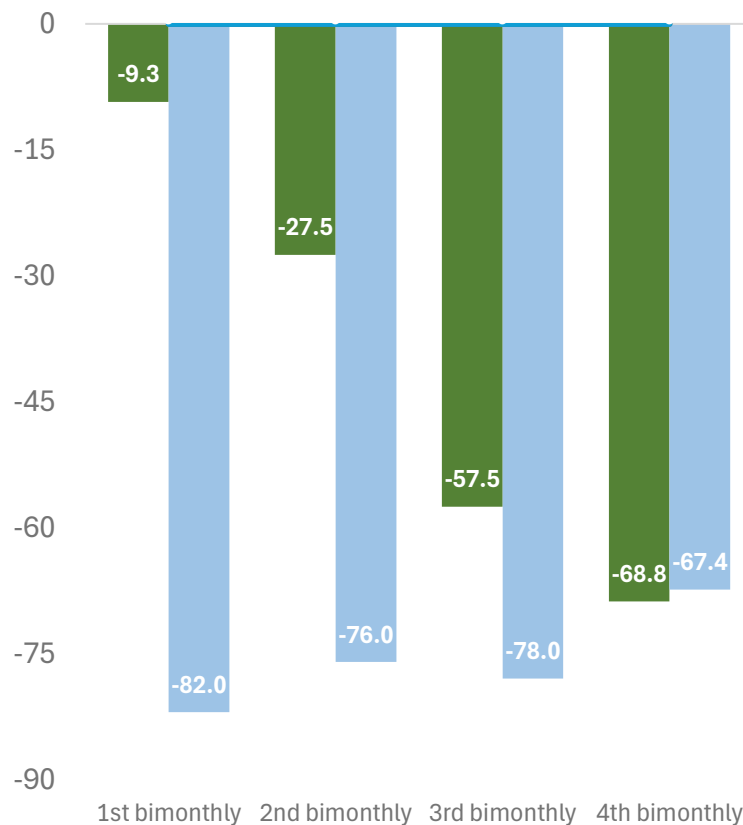
(R\$ billion, RARDP)



■ Beyond the target
■ Compatible with target
— 2024 deficit ceiling by the legal fiscal framework

Treasury and market forecasts for 2024 primary result

(R\$ billion)

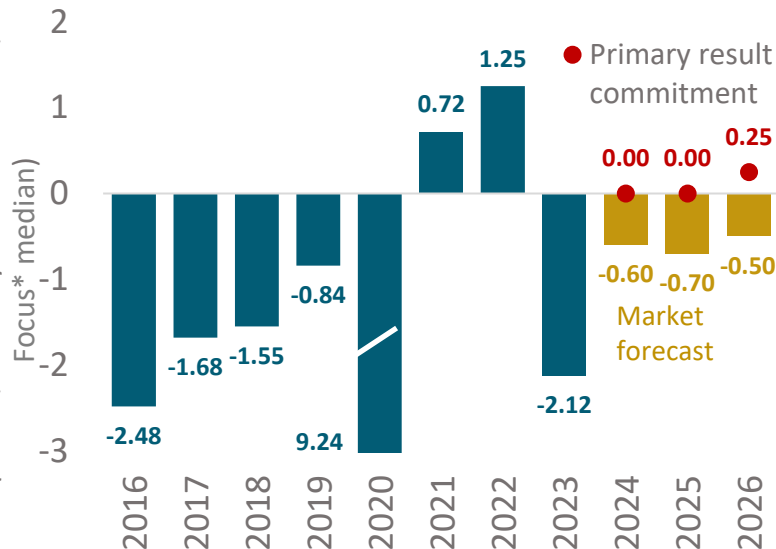


■ STN
■ QPC

Sources: BCB, STN (RARDP) and PLDO 2025.

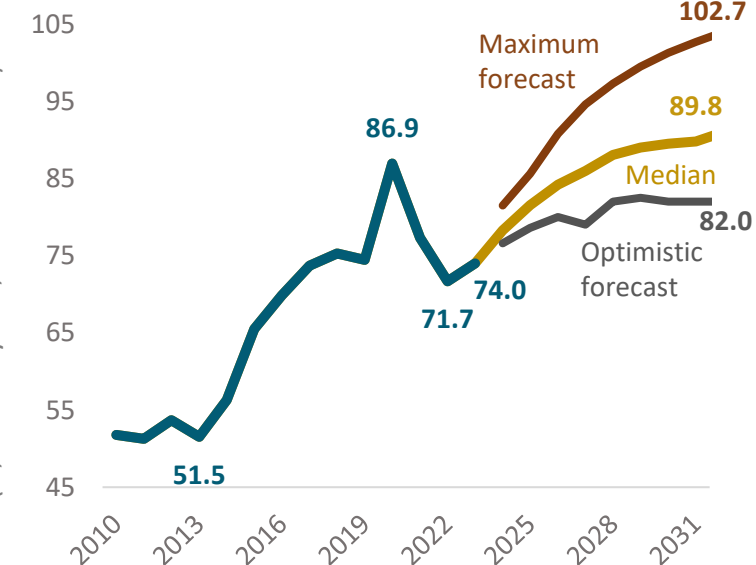
Public sector primary result

(% GDP, several years and forecast, Focus* median)



Evolution of GGGD/GDP

(%, several years, Focus* median)



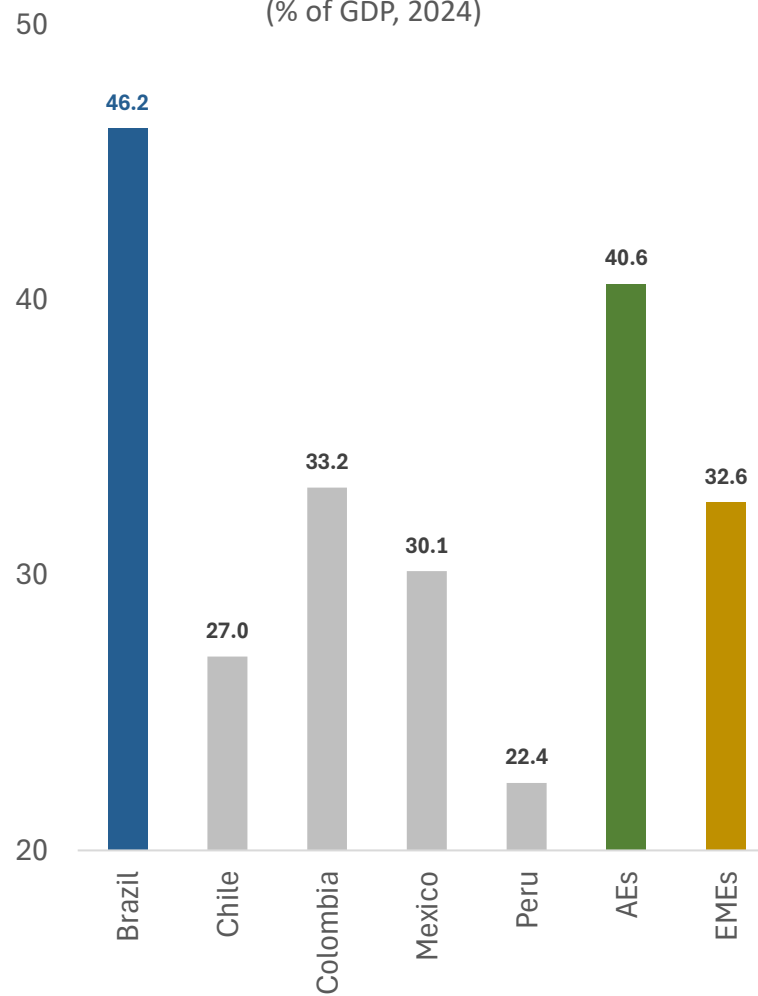
* Updated until 10/18/2024

Brazil has a history of high tax burden and expenditure, in comparison with other countries.

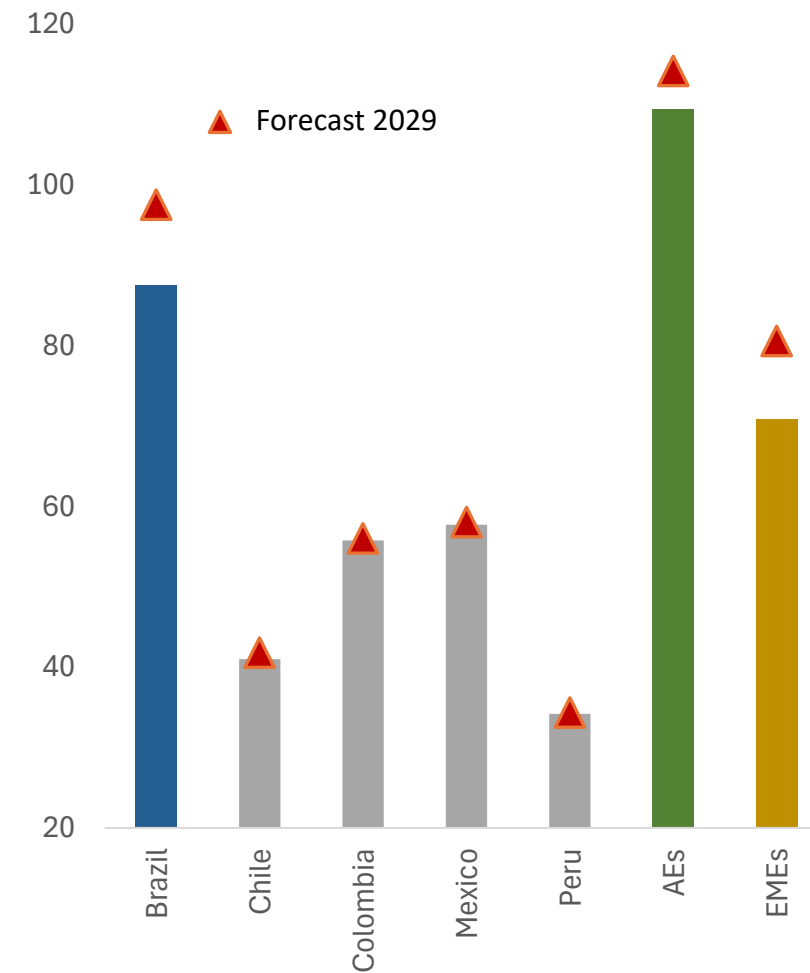
Revenue
(% of GDP, 2024)



Expenditure
(% of GDP, 2024)



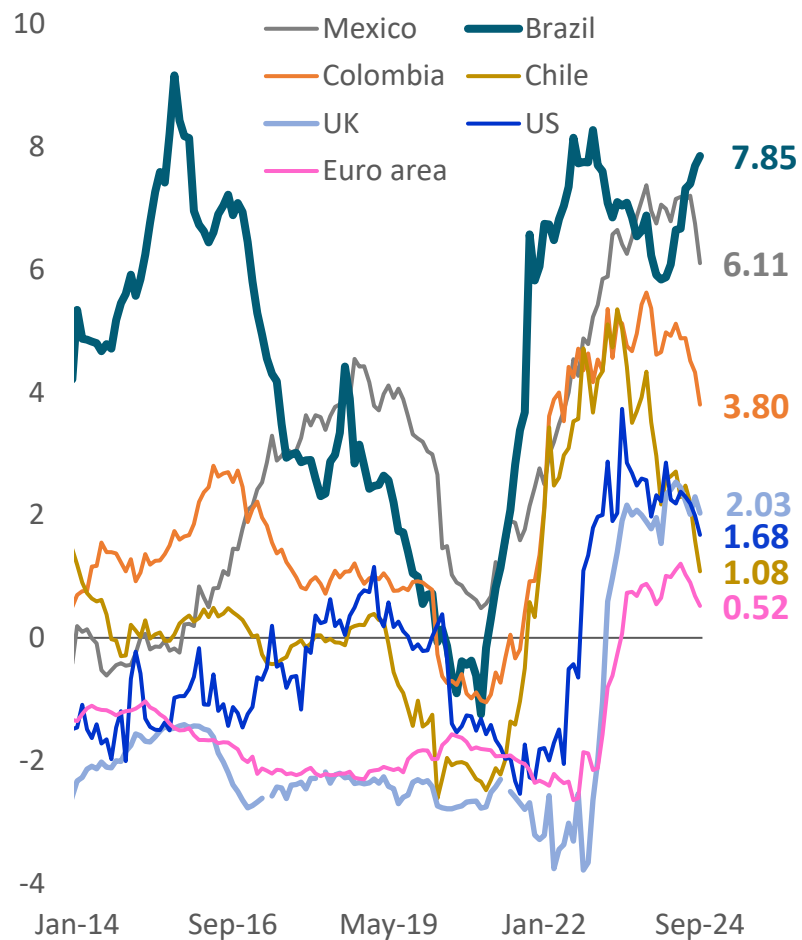
Gross debt
(% of GDP, 2024)



Sources: IMF

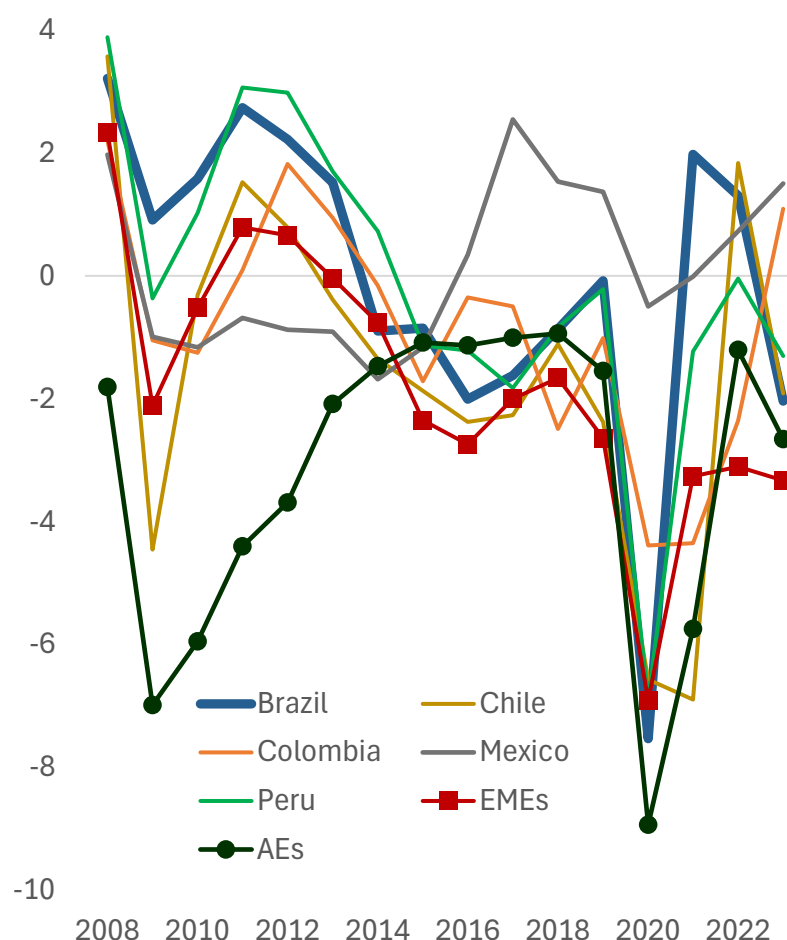
Real interest rate (ex ante)

(%)



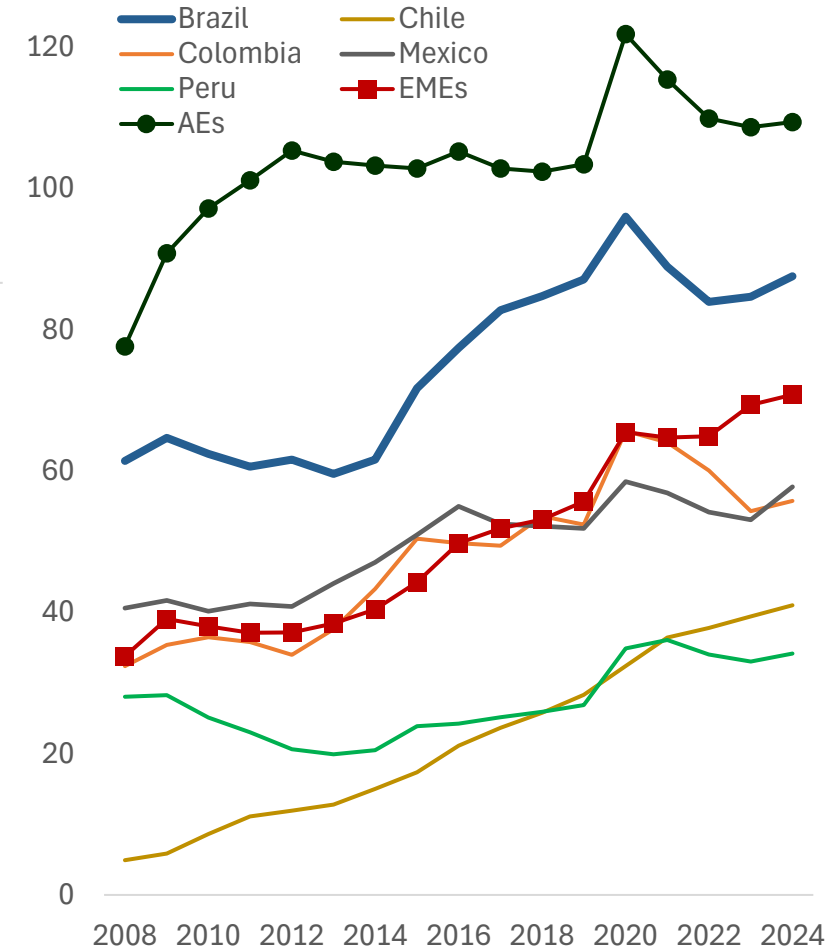
Primary balance

(% of GDP)

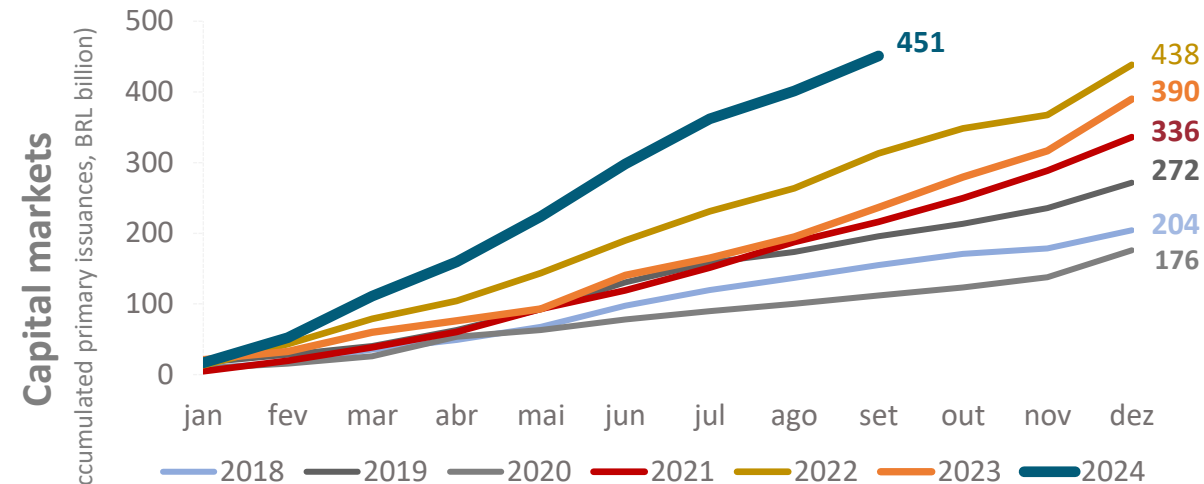
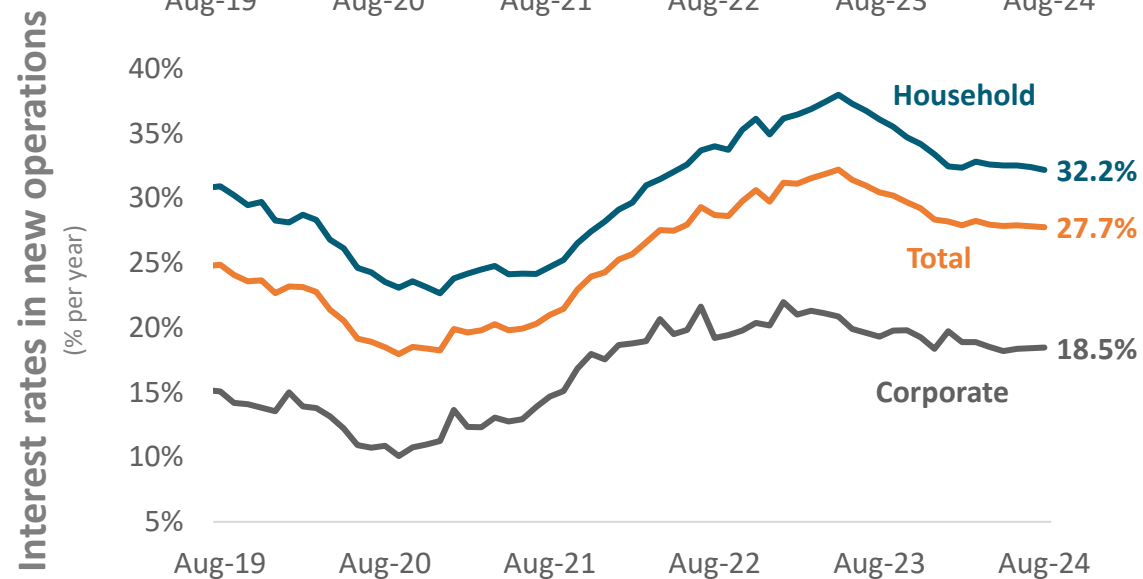
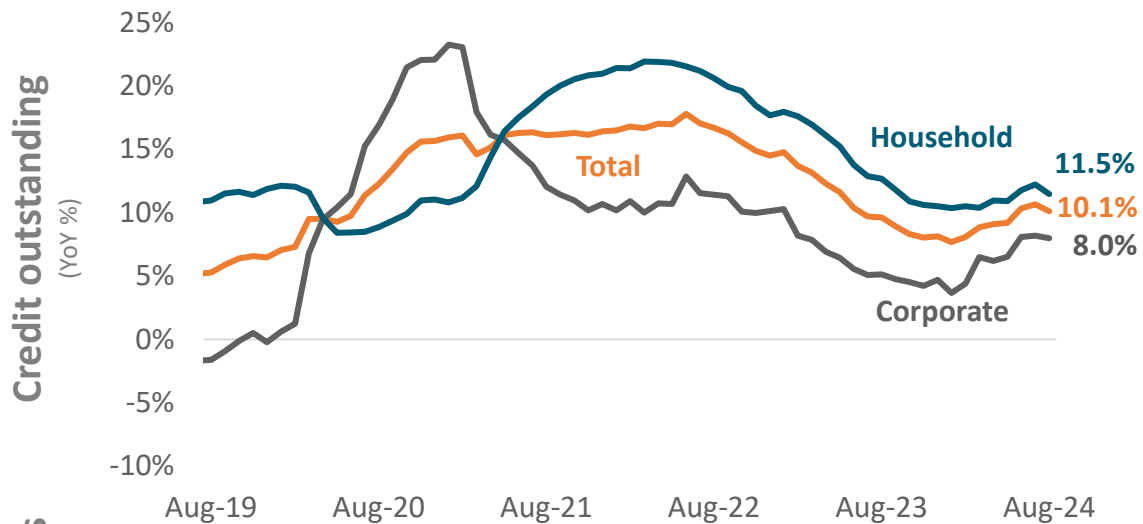


Gross debt

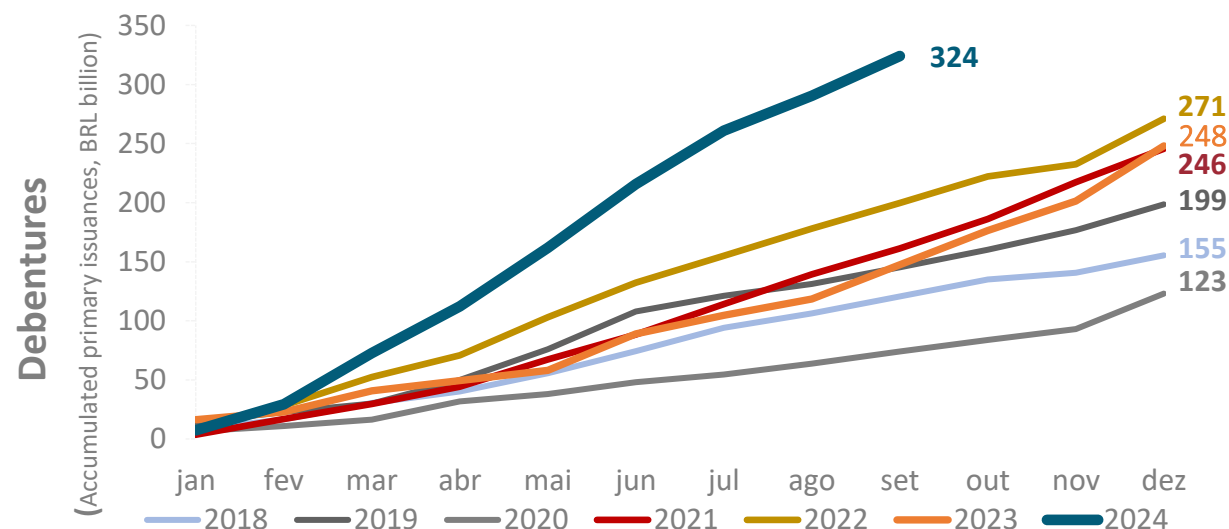
(% of GDP)



The credit cycle keeps expanding in volume and reducing rates. In 2024, capital market shows a volume of issuances 50% larger than the best year of the series.



*Includes debentures, NC, CRI and CRA

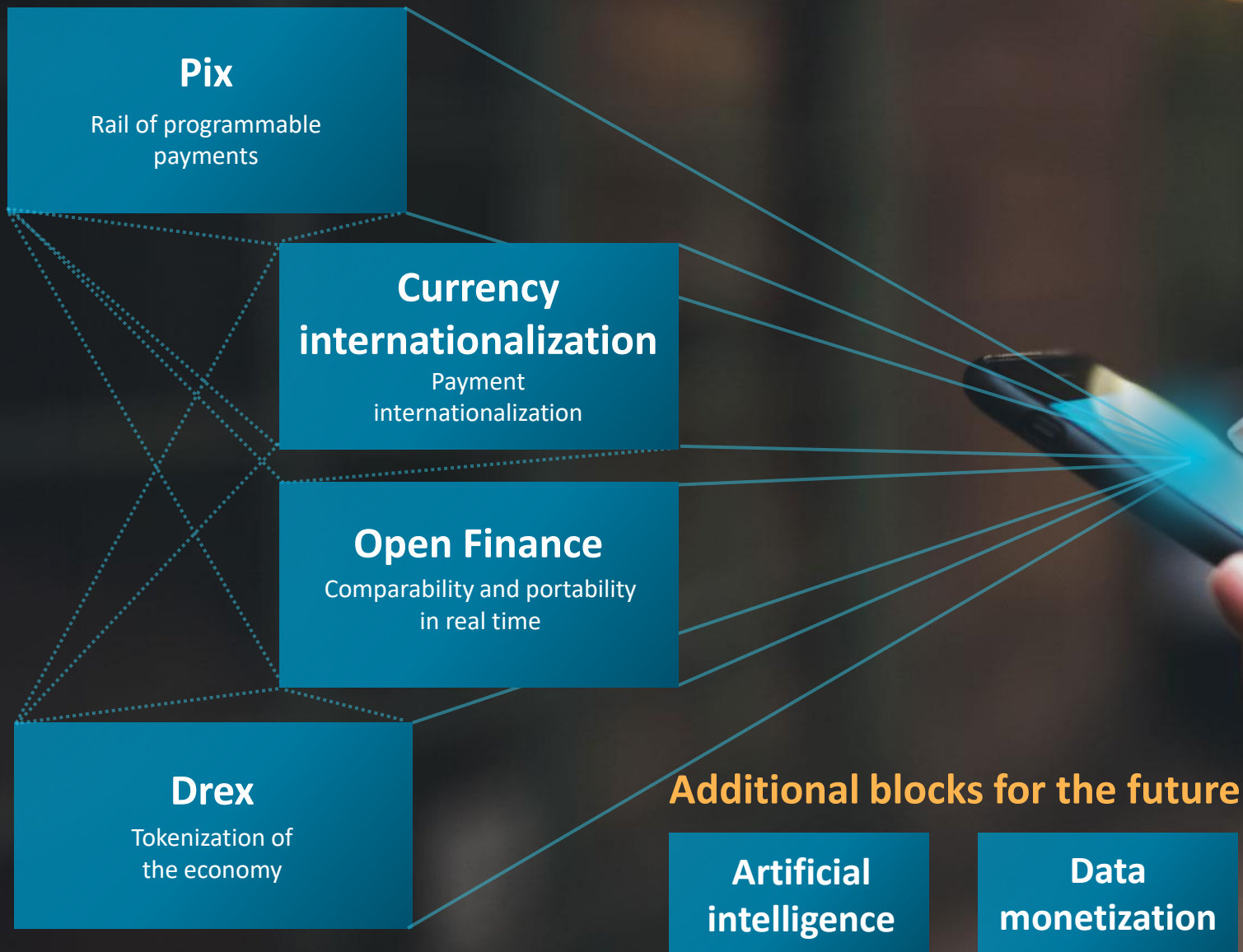


Technology Agenda

Design of the financial system
of the future

An integrated agenda

The four fundamental blocks



Pix gains space and increases its popularity



Pix growth promotes financial inclusion and enables small businesses

Pix growth

800 million

active Pix's keys.

154,0 million people
and **15,3 million**
companies use Pix.



227.4 million
operations in one
day

5.5 billion transactions in
Sep/24, against **3.8 billion** in
Sep/23, **increase of 44%**.

Sources: BCB, BIS.

Pix and financial inclusion

▪ **71.5 million** new users included with Pix.*

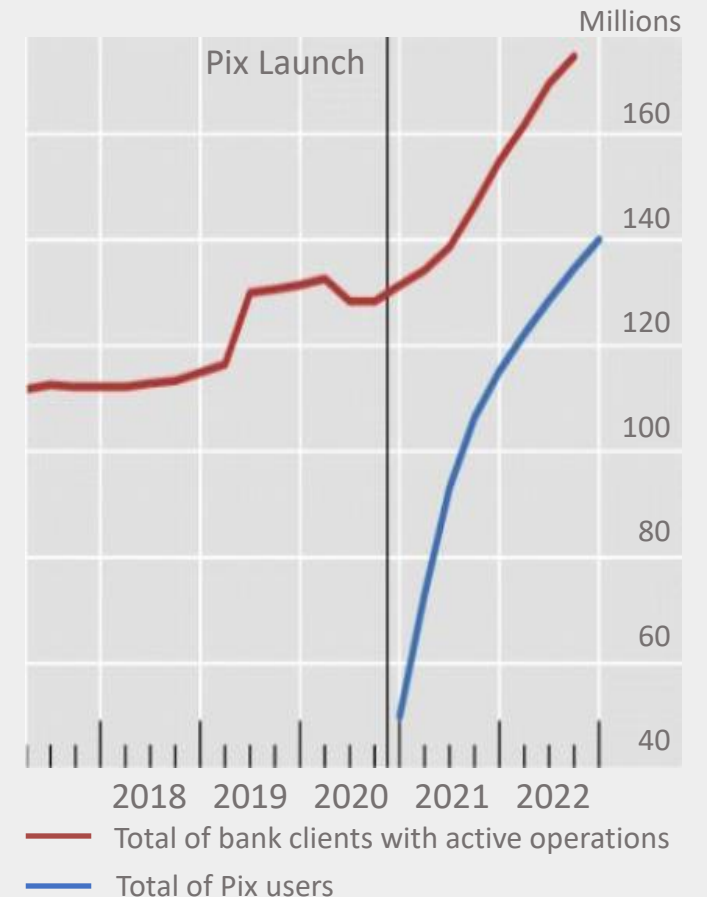
Transactions by value range

(Only natural persons payers – Nov/20 until Dec/22)



* Considering users who did not use TED in the 12 months prior to the launch of Pix and became PIX users.

Pix users vs. Bank clients



Currency internationalization

- **Connection of digital currencies.**
 - There will be real time transactions with low cost.
- **Three challenges for the connection of international payments systems:**
 - **Technology**
 - Connection between DLT and centralized systems (solved)
 - **Settlements**
 - Liquidity token pool (solved)
 - **Governance**
 - Taxonomy (minimal rules for cross-border payments)
 - We need to advance on the topic

Comparability and portability in real time

Examples of benefits of the Open Finance:

Reports from participant institutions (traditional banks, fintechs and credit unions)

More efficiency in credit operations:

- R\$ 1.2 billion credit via loan portability, with a 61% effectiveness gain during the process.
- R\$ 1 billion in credit origination.
- + R\$ 240 million in credit recovery.
- R\$ 2.5 million in personal loan through lower rates.
- Credit card offered to 1.3 million clients, who did not have access to the facility.
- Analysis of data shared via Open Finance already results in 80% of credit origination for new sellers.

Overdraft facility:

- R\$ 8 million in savings from paying overdraft interest at another financial institution in the first twelve months.

Better investment performance:

- R\$ 1.5 billion in more profitable investments for clients.
- 2.6 million clients been notified that their idle funds on another institution could be earning interest.

Improved financial management:

- + 9 million clients using management tools.
- 4 million customers engaged in consolidated financial management, with 47 million accesses.

Easier account opening process (onboarding):

- Reduction from 32 hours to 2h10m in the account opening process based on information obtained within the scope of Open Finance.
- 34% growth in account opening requests.



Timeline

July 31, 2024

Specific regulation for non-redirect payment journey

**November 14, 2024**

Testing in production

**February 28, 2025**

Launching to the population

**BC launches rules for contactless Pix and defines new governance structure****Non-redirect payment journey**

- Changes that enhance customers' experience in the payment initiation journey, enabling:
 - Contactless Pix payment via wallet
 - More convenience in online payments
- Customers will be able to choose their institution, add their account to their preferred digital wallet, and save it to make in-person payments with contactless Pix, just as is done with cards.
- Furthermore, customers will no longer need to leave the online shopping environment, in e-commerces, to make the payment.

Benefits in three dimensions:

1. Banking efficiency

- To introduce the concept of tokenization
 - Risk management, collateral, financing, asset management, data analysis, settlement and products

2. Efficiency in digital payments

- Bridge to De-Fi environment
 - To bring decentralized finance into the regulatory perimeter
- Efficiency in financial intermediation

3. Efficiency in contracts and register

Drex Pilot:

Objectives

- Development of the Drex platform
- Dialog with society on the Drex development

Guidelines

1. Multi-asset DLT -Hyperledger Besu
2. Simulated transactions
3. Asset fragmentation
4. Access to services through financial and payment institutions



Broadening the test scope

- Governance
 - 3rd party smart contracts
 - business models
- Privacy
 - variability of requirements

New assets

- Tightening partnership with other regulators

Steps

- 2024 – current participants
- H1/2025 – new participants

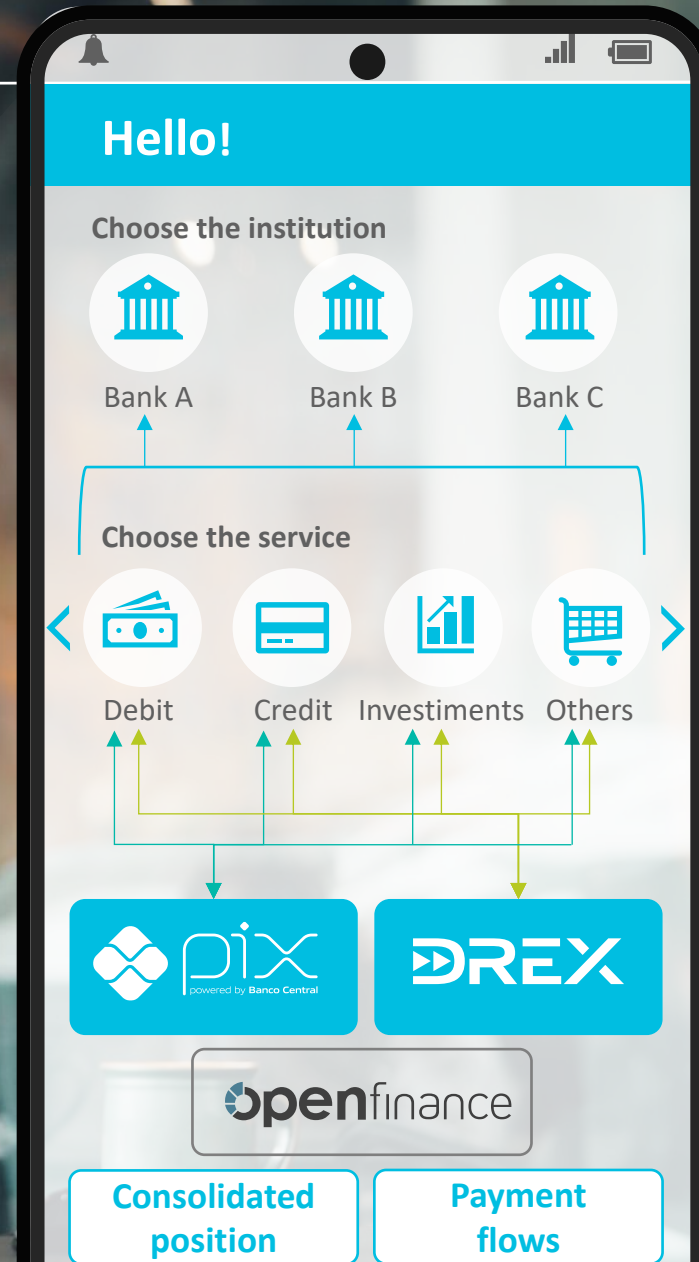
The 13 selected use cases and their themes:

- Credit card receivables financing
- Credit collateralization
 - on term deposits
 - on government bonds
- International Trade Finance
- FX Market Optimization
- Liquidity Pool for government bonds
- Transactions with RWA
 - Bank Credit Notes
 - Debentures
 - Agribusiness Assets
 - Decarbonization Credits - CBIO
 - Vehicles
 - Real Estate
- Transactions with Virtual Assets



Financial services aggregator

- Marketplace environment
- Competition by channel and for principality



Offline

Online

Data wallet

Thank you!

Roberto Campos Neto

Governor of Banco Central do Brasil

October 28th, 2024

