

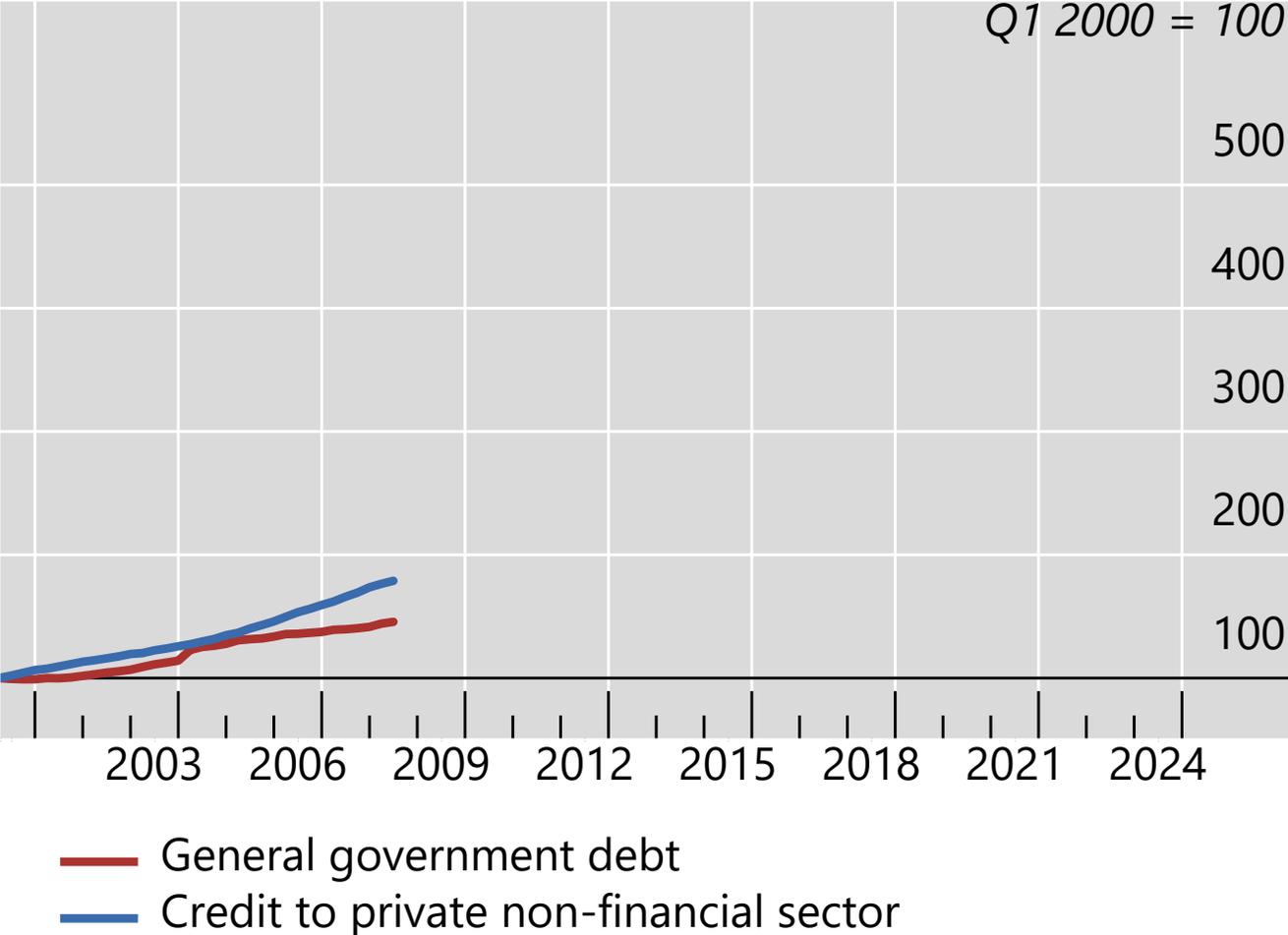


# Post-GFC rewiring of the global financial system

**Hyun Song Shin\***, Economic Adviser and Head of the Monetary and Economic Department, BIS  
15th Annual JRCPPF Conference, Princeton, 20 February 2026

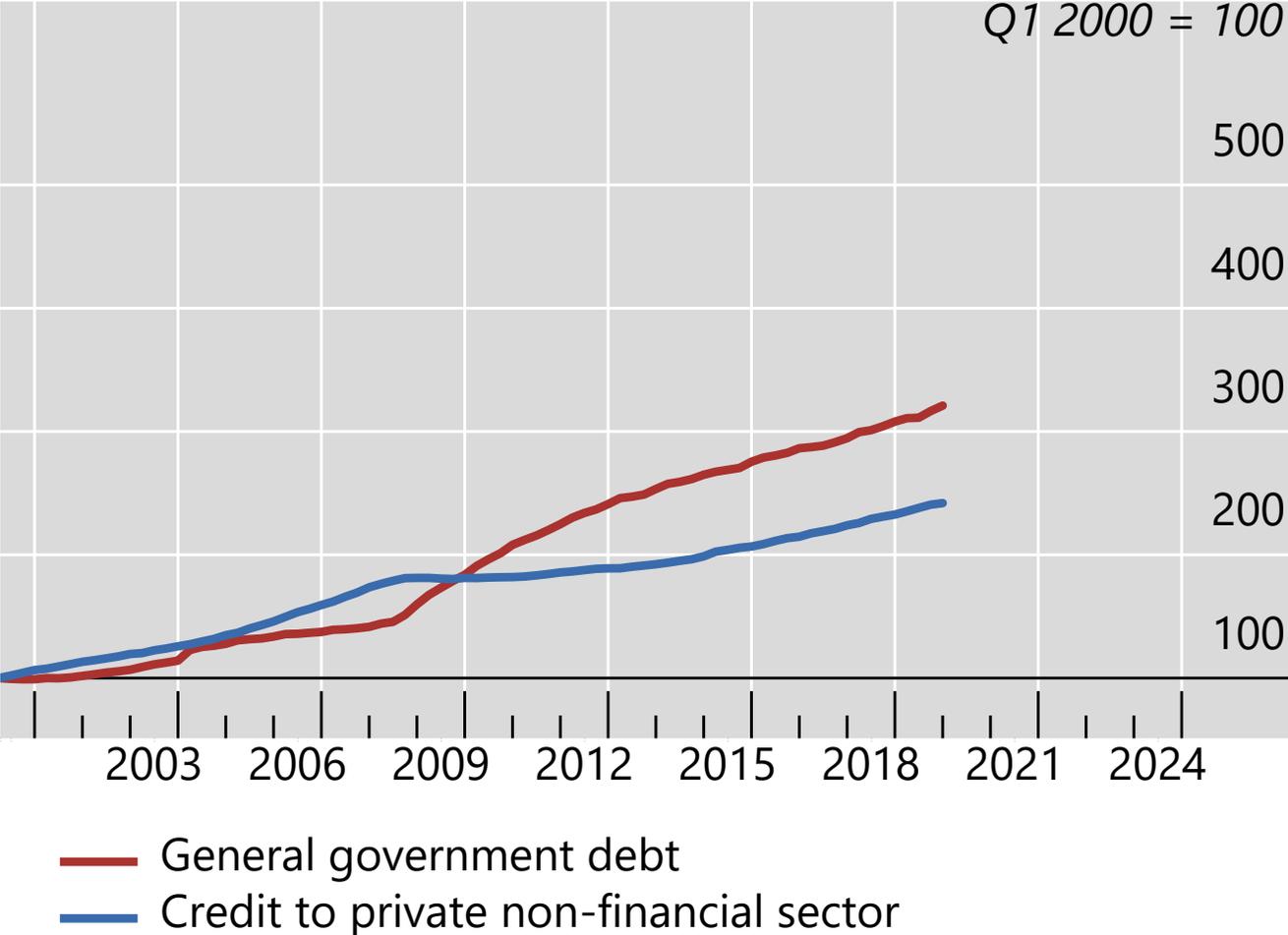
\* The views expressed are mine and not necessarily those of the BIS.

# Before the GFC, credit to the private sector grew faster than credit to government



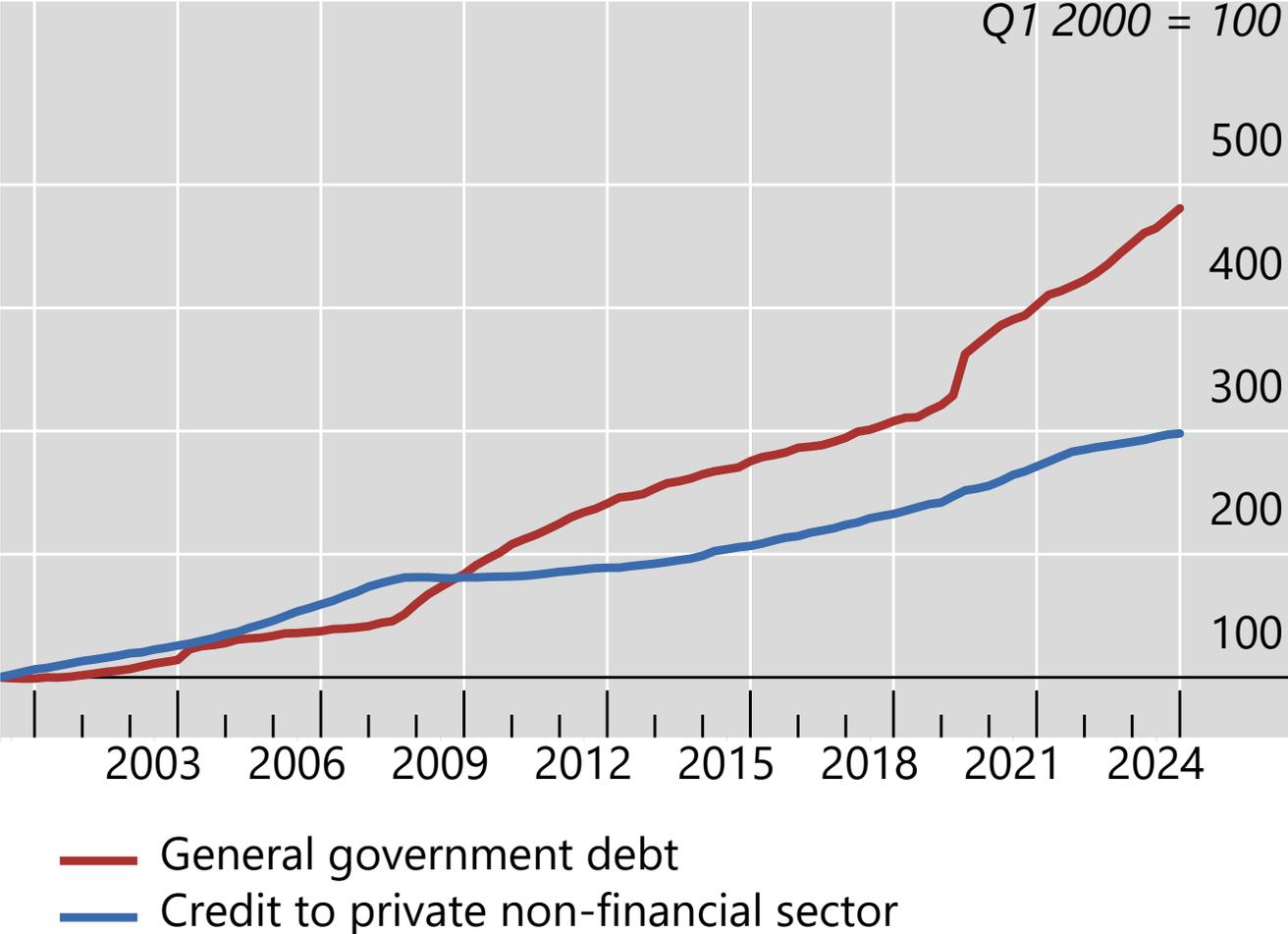
Sources: BIS (2025); IMF; national data.

# Credit to government has outpaced credit to the private sector after the GFC



Sources: BIS (2025); IMF; national data.

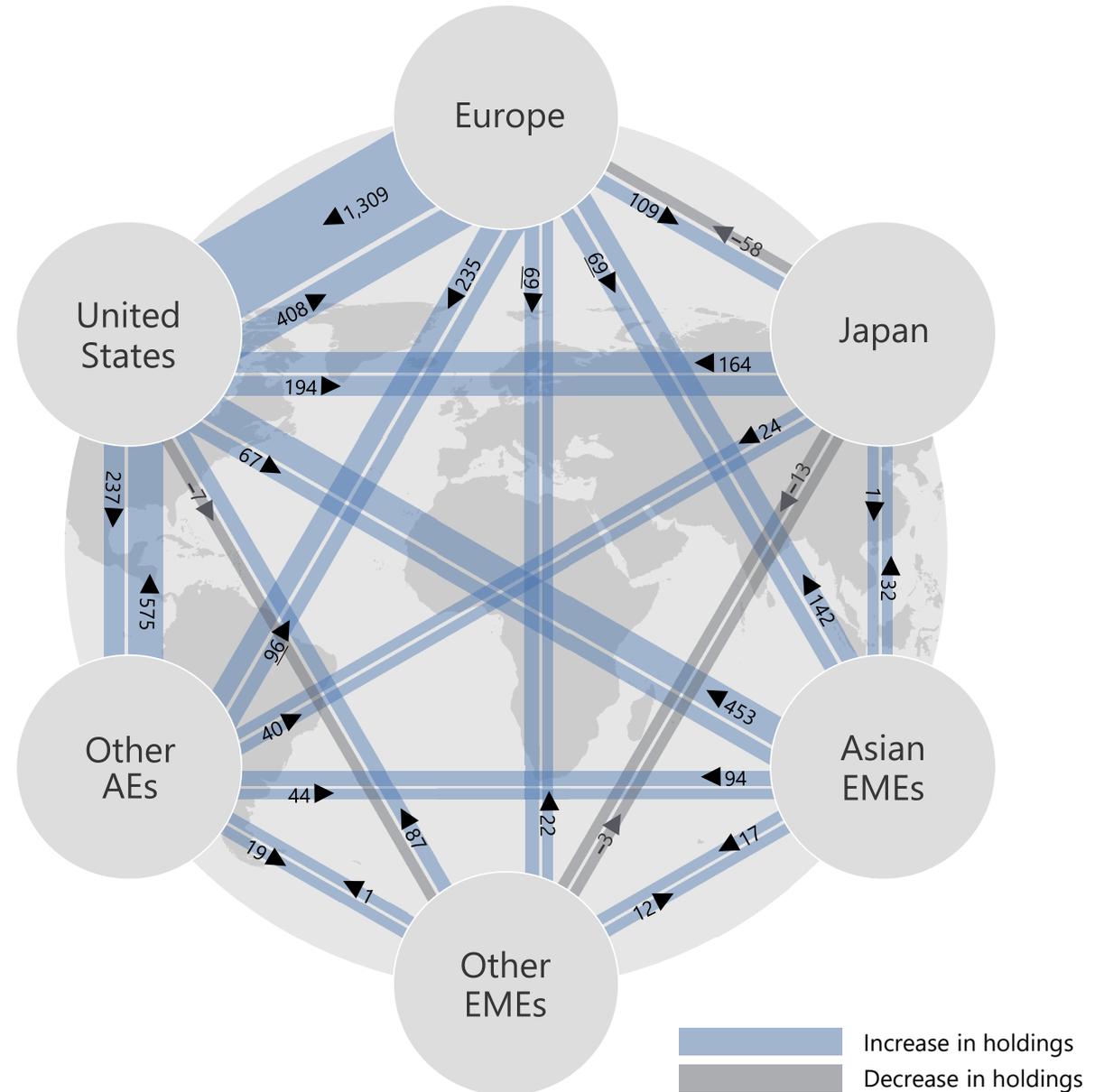
# Policy response to Covid gave this trend a further upward boost



Sources: BIS (2025); IMF; national data.

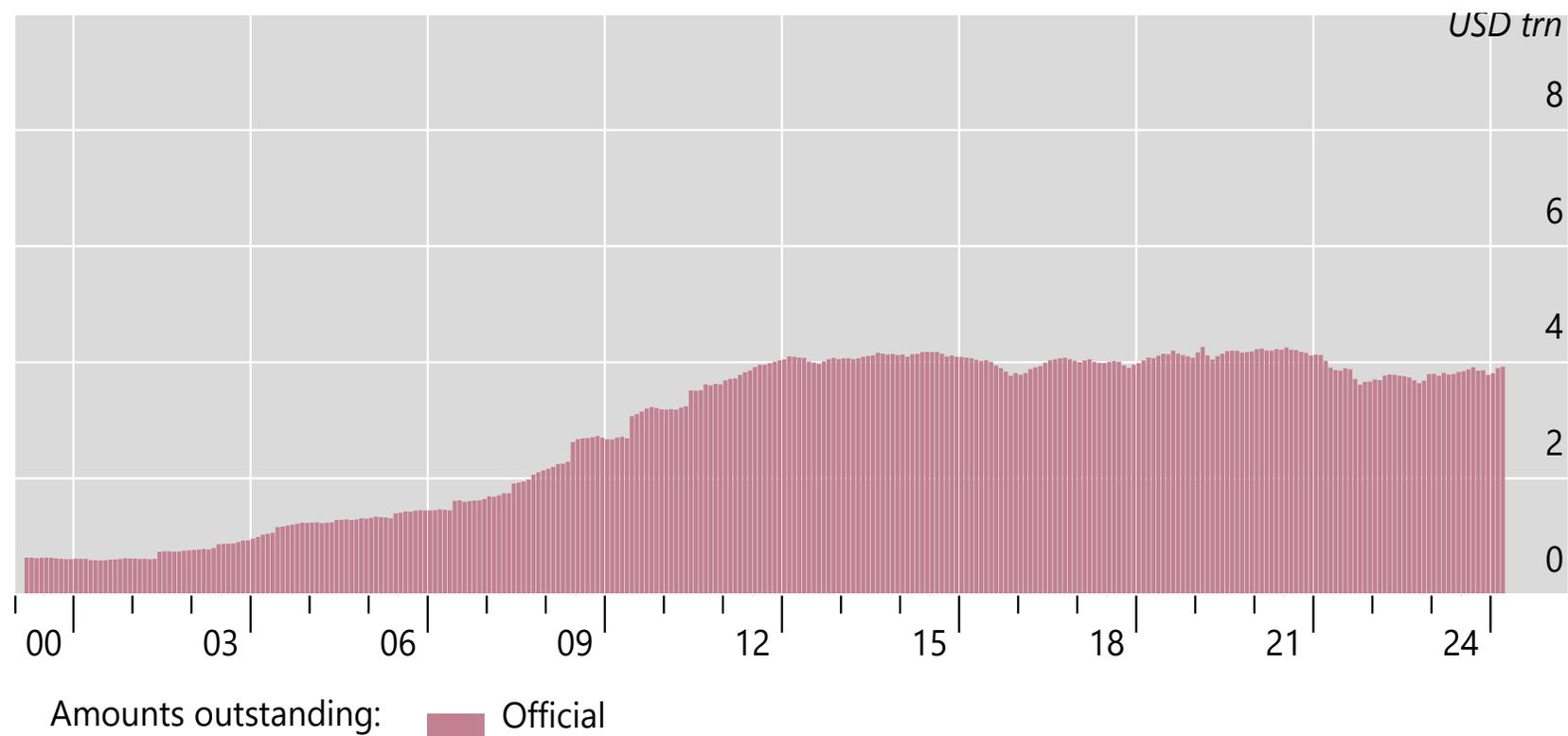
Portfolio flows are now centre stage as a key driver of financial conditions

*Changes in stocks over 2015–23, in USD bn*



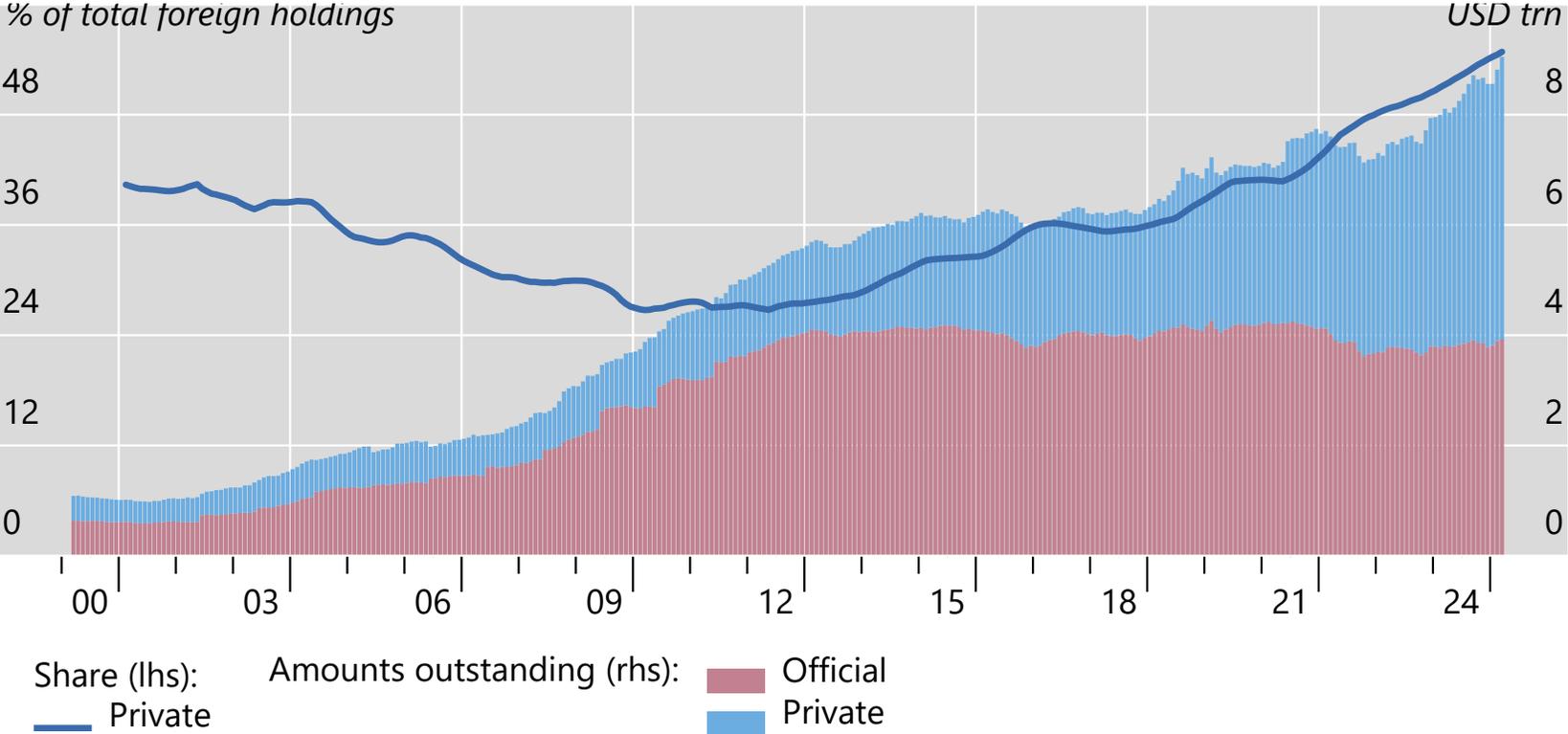
Sources: BIS (2025); IMF.

## Foreign official sector holdings of US Treasuries peaked around 2012...



Sources: BIS (2025); US Treasury International Capital (TIC) data.

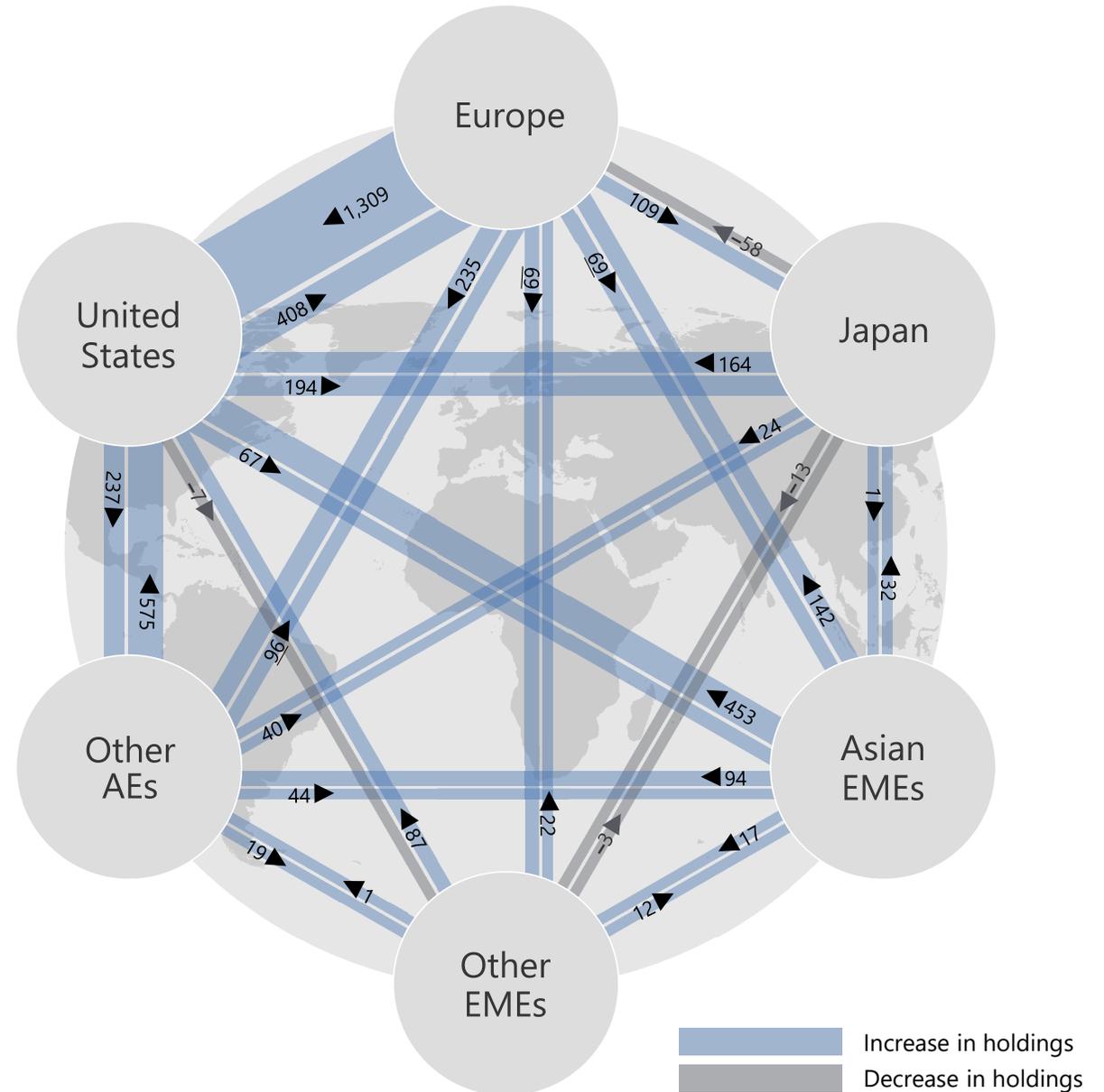
# Private sector holders have been in the driver's seat since



Sources: BIS (2025); US Treasury International Capital (TIC) data.

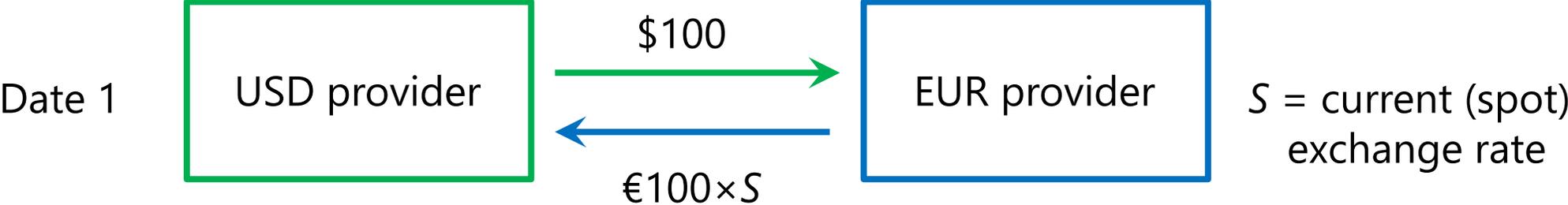
Global nature of sovereign bond markets means that currency choice is an integral part of the story

*Changes in stocks over 2015–23, in USD bn*



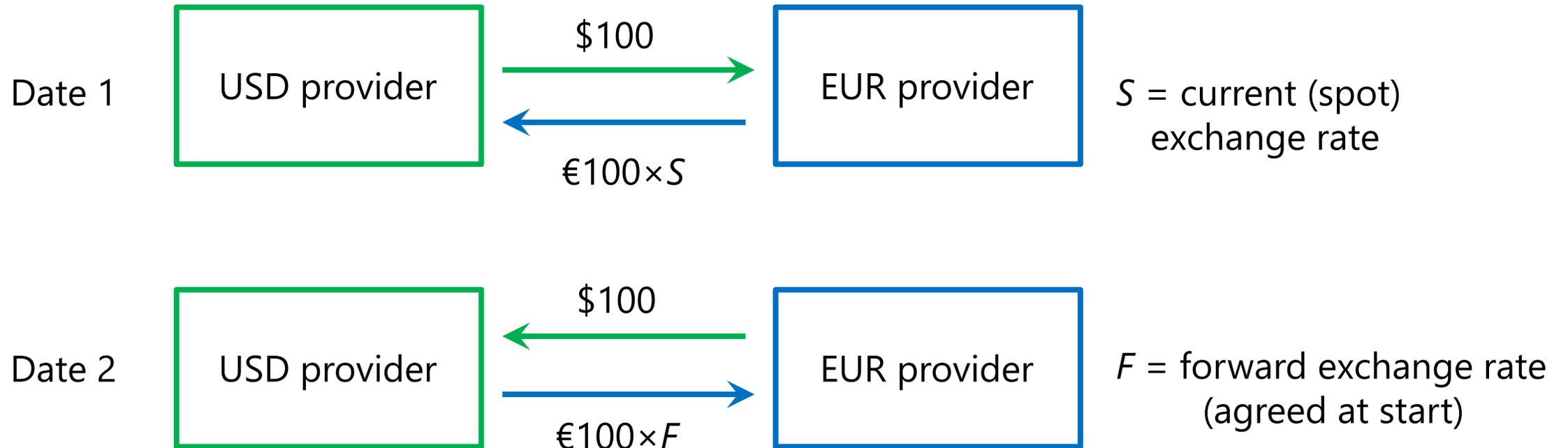
Sources: BIS (2025); IMF.

FX swaps are collateralised borrowing operations which make money fungible across currencies



Source: BIS (2025).

# FX swaps are collateralised borrowing operations which make money fungible across currencies



Source: BIS (2025).

# Balance sheet mechanics of FX swap-enabled bond investment:

Euro-based investor has euros...

Assets	Liabilities
EUR cash	EUR obligations
Other EUR assets	

Source: BIS (2025).

## Balance sheet mechanics of FX swap-enabled bond investment:

...borrows dollars by pledging euros; has future obligation to repay dollars...

Assets	Liabilities
EUR cash	EUR obligations
Other EUR assets	

Assets	Liabilities
USD cash	EUR obligations
Other EUR assets	
Forward EUR receipt	Forward USD obligation

Source: BIS (2025).

# Balance sheet mechanics of FX swap-enabled bond investment:

...buys USD securities; currency exposure is hedged

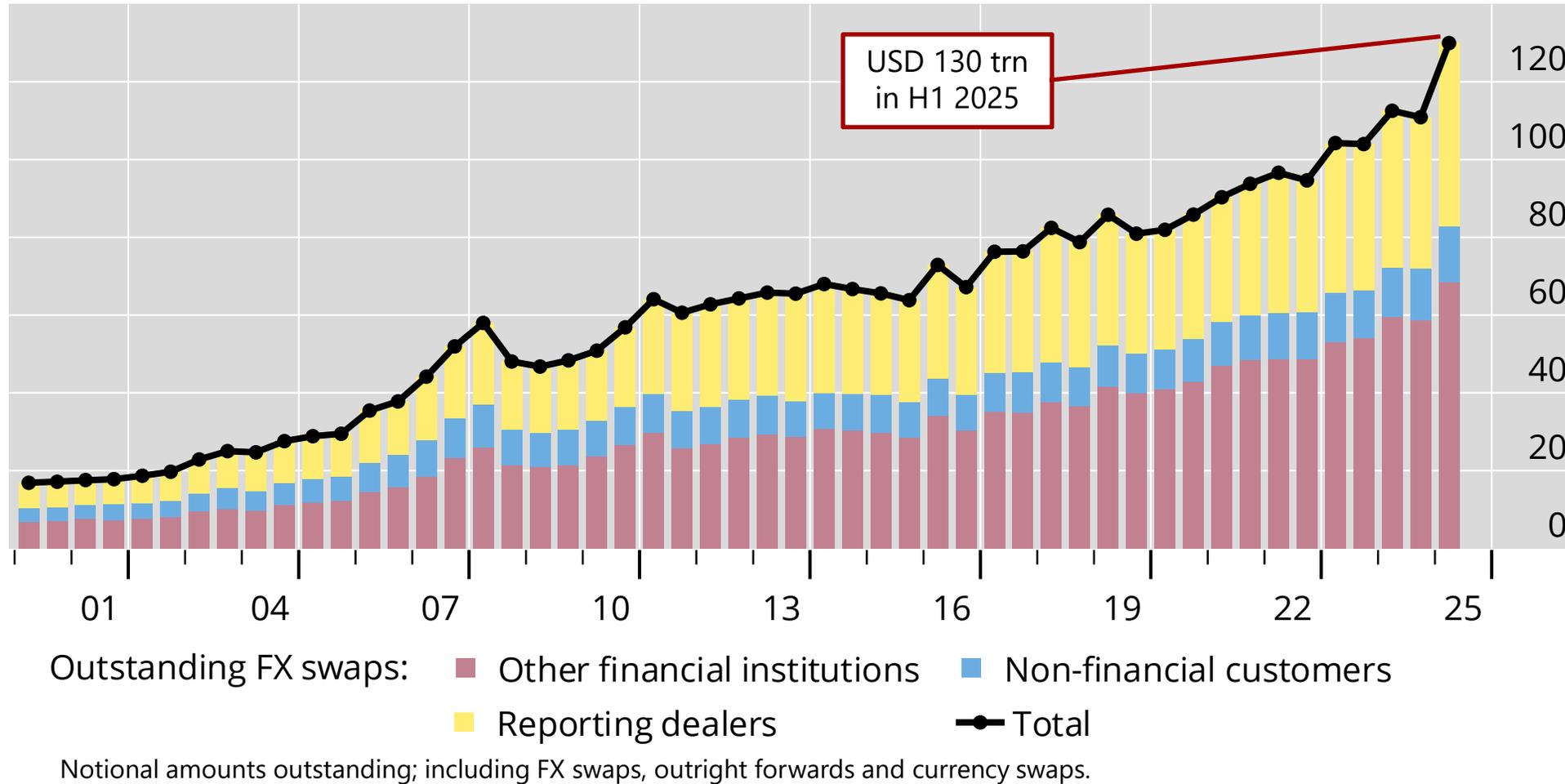
Assets	Liabilities
EUR cash	EUR obligations
Other EUR assets	

Assets	Liabilities
USD cash	EUR obligations
Other EUR assets	
Forward EUR receipt	Forward USD obligation

Assets	Liabilities
USD security	EUR obligations
Other EUR assets	
Forward EUR receipt	Forward USD obligation

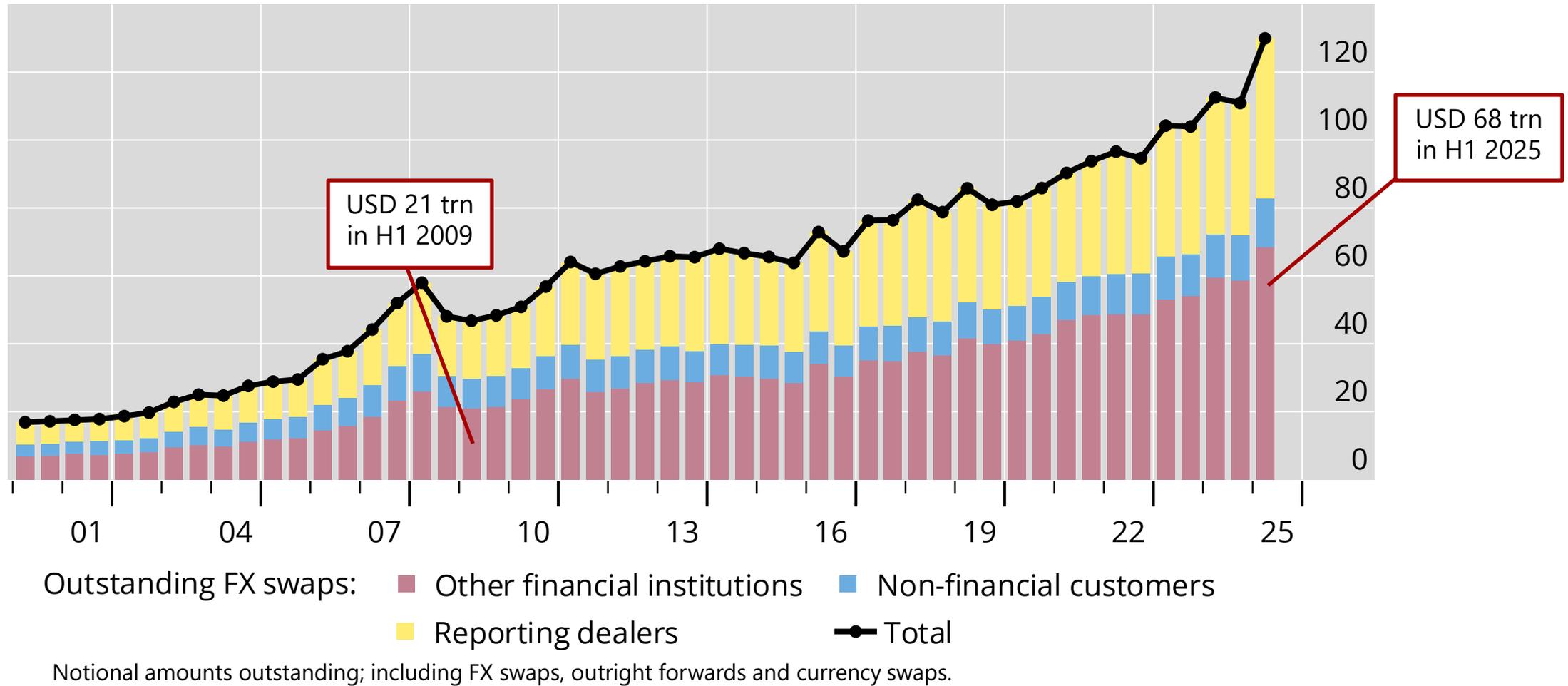
Source: BIS (2025).

# FX swap market grew rapidly after the GFC, reaching \$130 trillion in mid-2025



Sources: Hernández de Cos (2025); BIS (2025); BIS OTC derivatives statistics.

# FX swap market grew rapidly after the GFC, reaching \$130 trillion in mid-2025



Sources: Hernández de Cos (2025); BIS (2025); BIS OTC derivatives statistics.

Ex post hedging

## Ex post hedging with FX swaps:

EUR-based investor with unhedged USD security ...

Assets	Liabilities
USD security	EUR obligations
Other EUR assets	

Source: Shin et al (2025a).

## Ex post hedging with FX swaps:

...obtains FX swap so future USD obligation matches USD security...

Assets	Liabilities
USD security	EUR obligations
Other EUR assets	

Assets	Liabilities
USD security	EUR obligations
USD deposit	
Other EUR assets	
Forward EUR receipt	Forward USD obligation

Source: Shin et al (2025a).

## Ex post hedging with FX swaps:

...sells excess USD cash in spot market

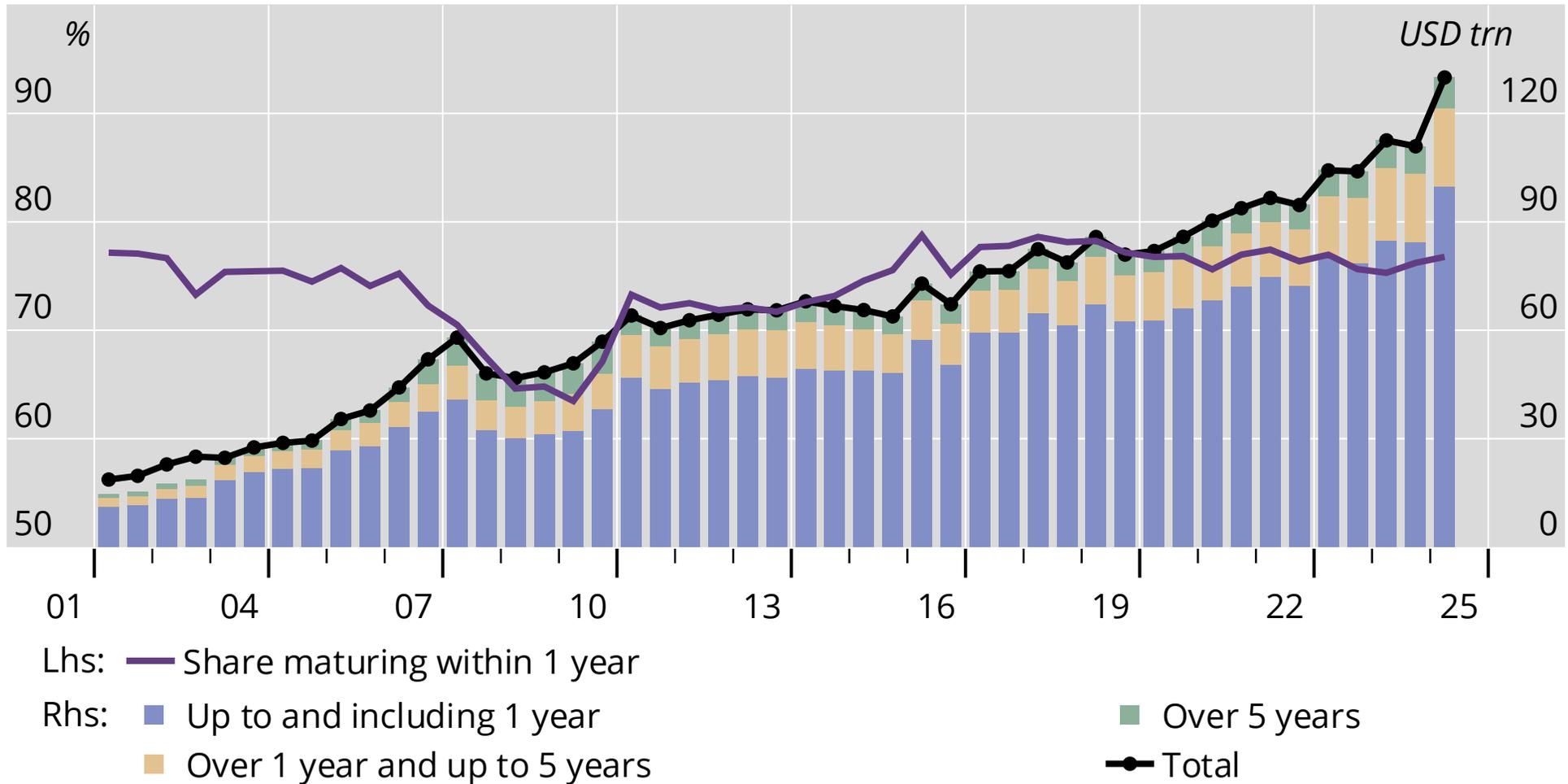
Assets	Liabilities
USD security	EUR obligations
Other EUR assets	

Assets	Liabilities
USD security	EUR obligations
USD deposit	
Other EUR assets	
Forward EUR receipt	Forward USD obligation

Assets	Liabilities
USD security	EUR obligations
EUR deposit	
Other EUR assets	
Forward EUR receipt	Forward USD obligation

Source: Shin et al (2025a).

# FX swaps are mainly short-term instruments; there are financial stability implications through the banking sector



Sources: Hernández de Cos (2025); BIS (2025); BIS OTC derivatives statistics.

# Global dollar deposits and the rewiring of the financial system

Suppose government bonds are initially owned mostly by non-bank investors

Central bank		Commercial bank		Non-bank	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Government bonds ( $G_0$ )	Reserves ( $R_0$ )	Reserves ( $R_0$ )	Deposits ( $D_0$ )	Government bonds ( $G_0$ )	Liabilities
Other assets	Other liabilities	Other assets	Other liabilities	Deposits ( $D_0$ )	
				Other assets	

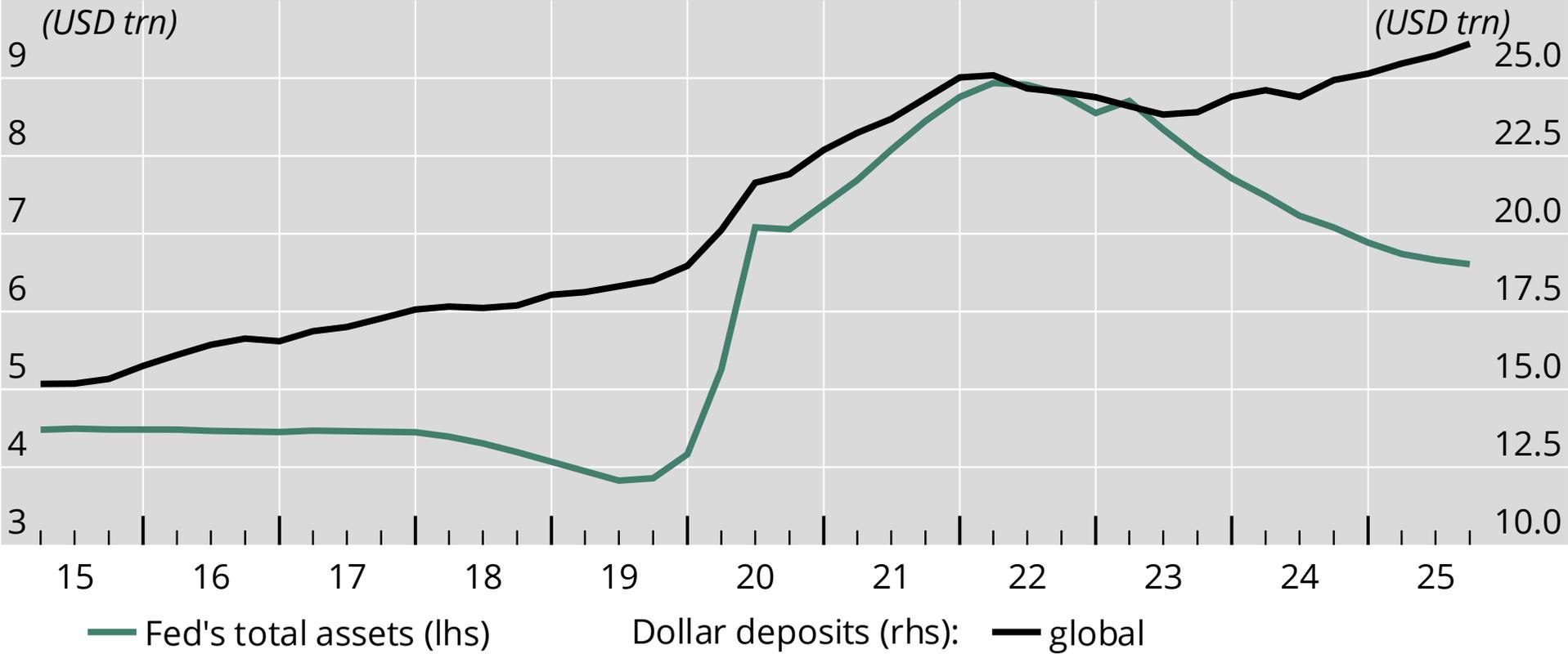
Source: Avdjiev et al (2026a).

# Central bank bond purchases increase the deposits of bond sellers

Central bank		Commercial bank		Non-bank	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Government bonds ( $G_0 + \$1$ )	Reserves ( $R_0 + \$1$ )	Reserves ( $R_0 + \$1$ )	Deposits ( $D_0 + \$1$ )	Government bonds ( $G_0 - \$1$ )	Liabilities
Other assets	Other liabilities	Other assets	Other liabilities	Deposits ( $D_0 + \$1$ )	
				Other assets	

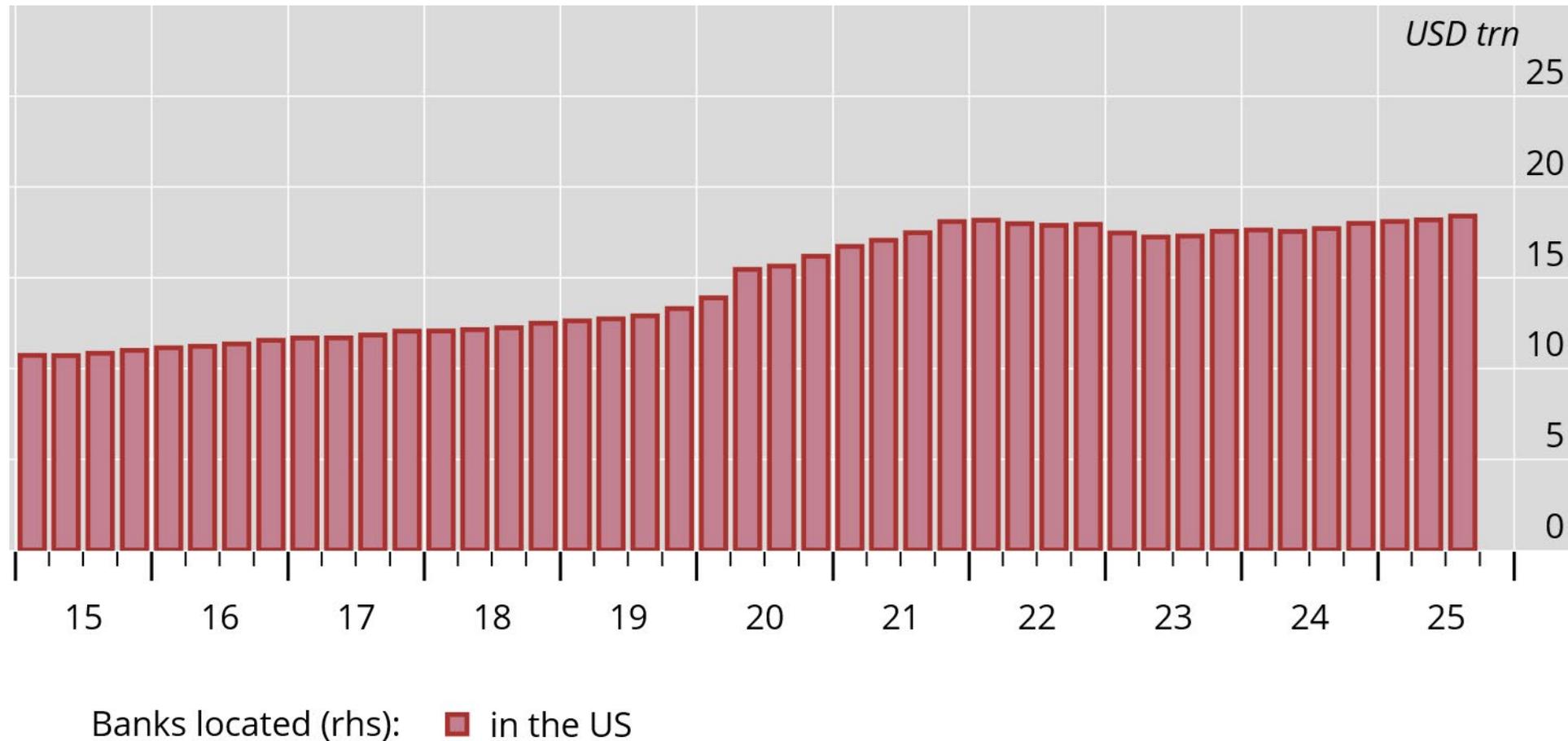
Source: Avdjiev et al (2026a).

Dollar deposits increase when the Fed balance sheet expands, but there is a ratchet effect; deposits have not declined as Fed balance sheet shrinks



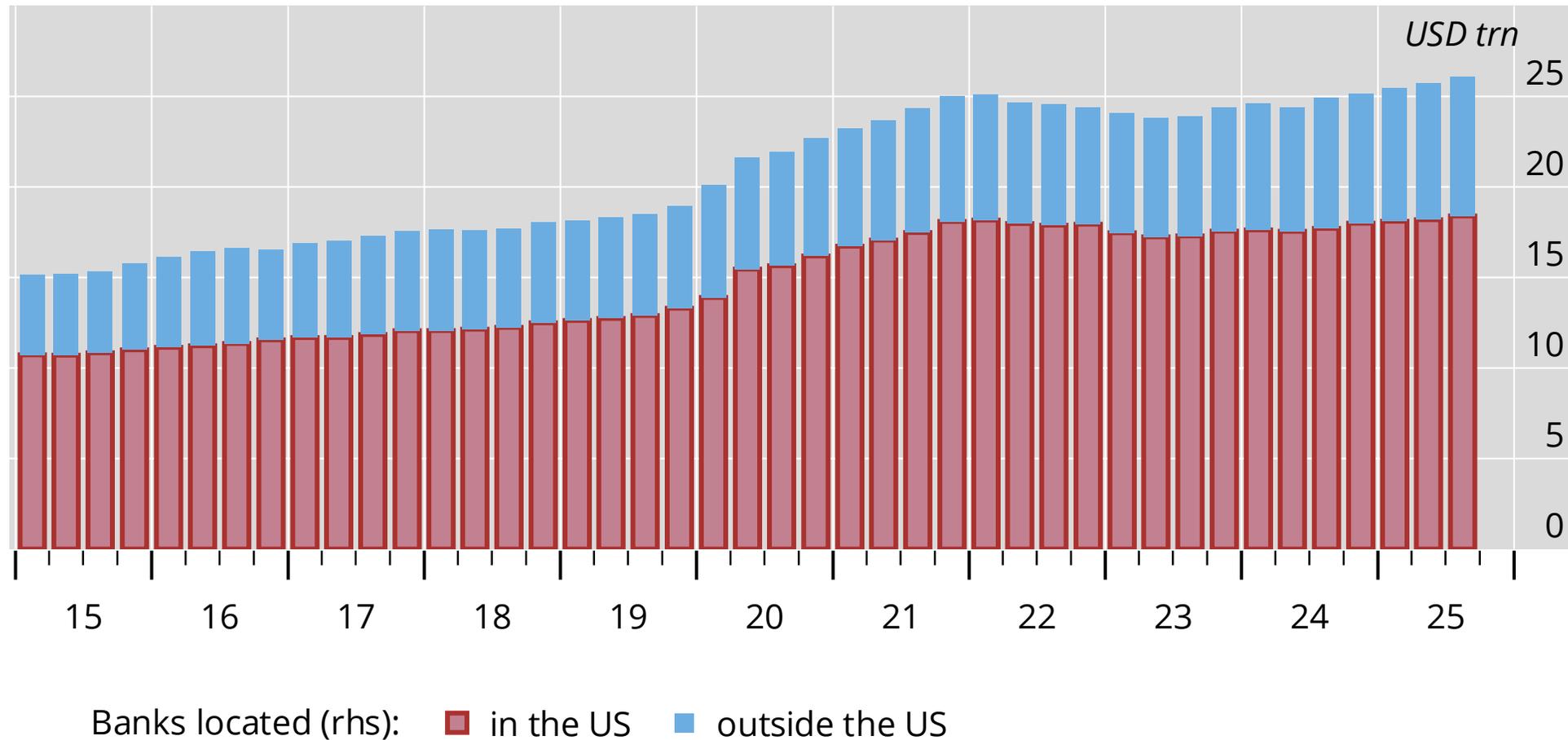
Sources: Avdjiev et al (2026b); Federal Reserve Bank of St Louis; BIS locational banking statistics by residence.

## Dollar deposits at banks in the US have continued to grow...



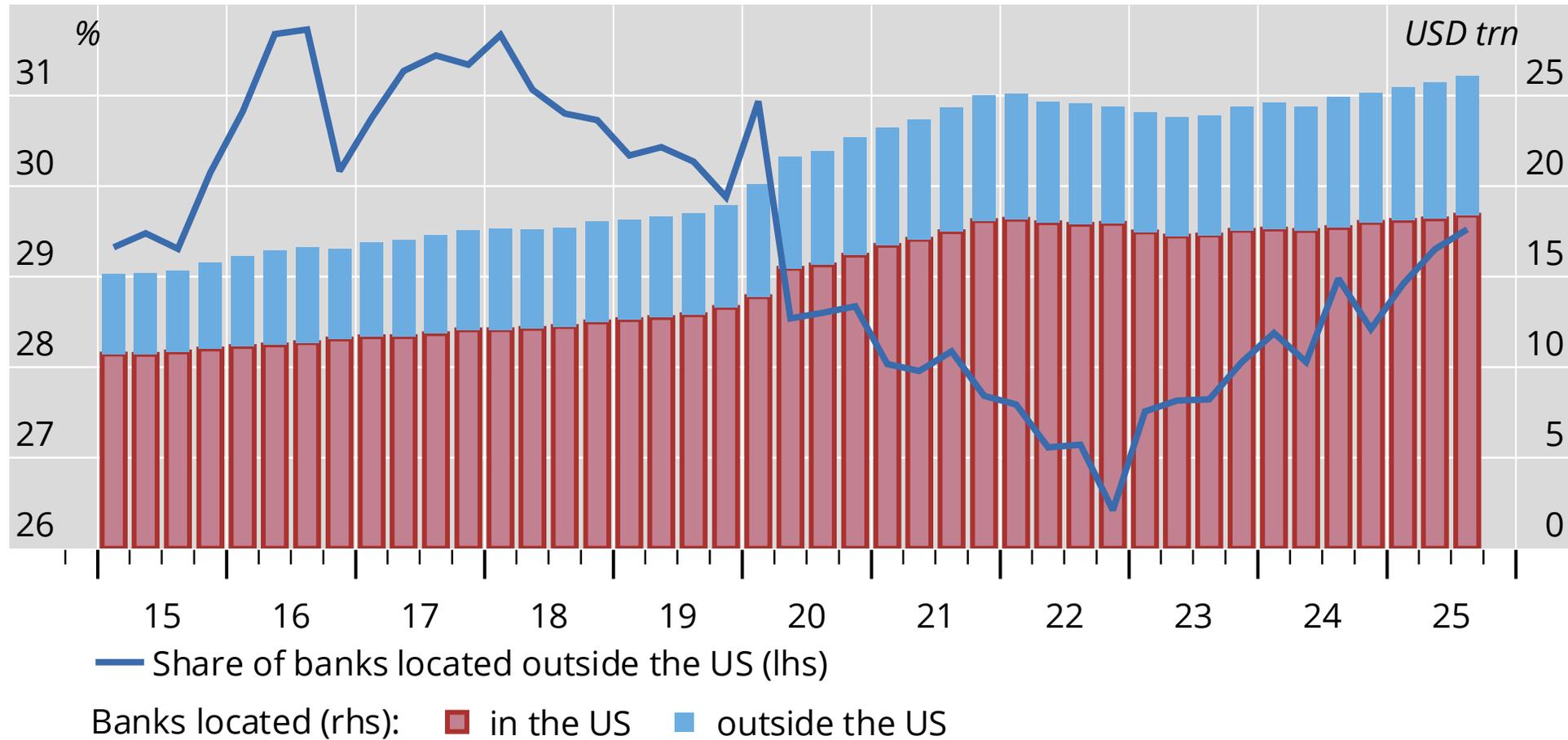
Sources: Avdjiev et al (2026b); Federal Reserve Bank of St Louis; BIS locational banking statistics by residence.

## But dollar deposits at banks outside the US are also substantial



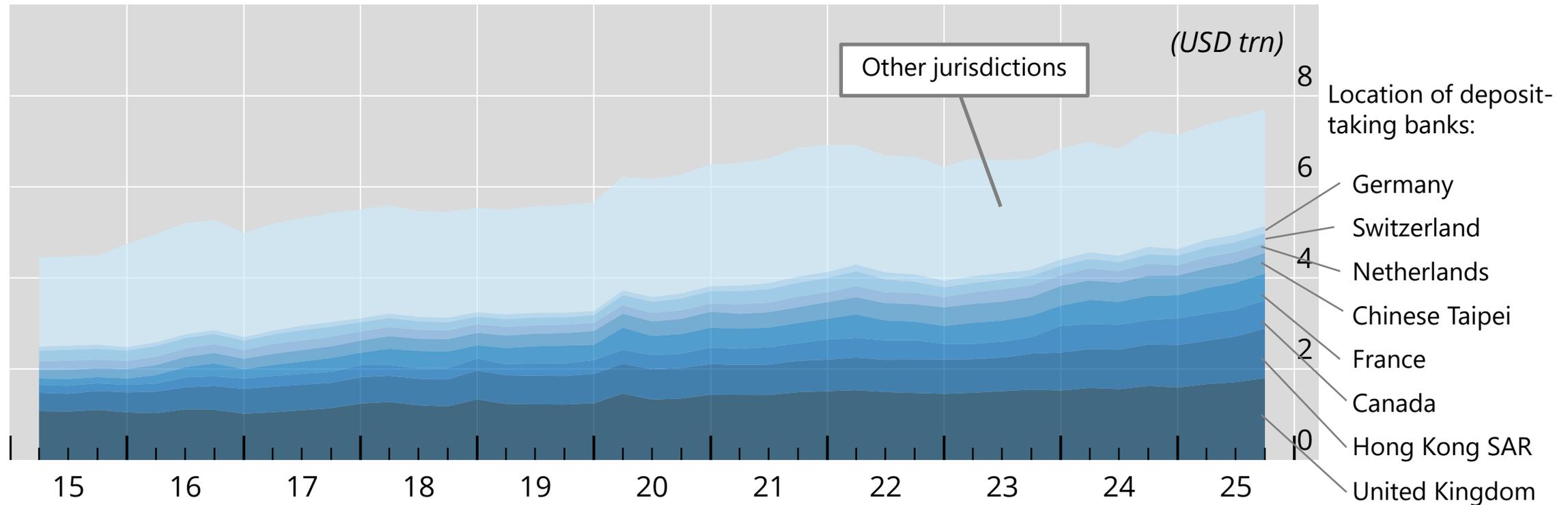
Sources: Avdjiev et al (2026b); Federal Reserve Bank of St Louis; BIS locational banking statistics by residence.

## Almost 30% of dollar deposits are at banks outside the US



Sources: Avdjiev et al (2026b); Federal Reserve Bank of St Louis; BIS locational banking statistics by residence.

## Dollar deposits outside the US are widely spread across the world



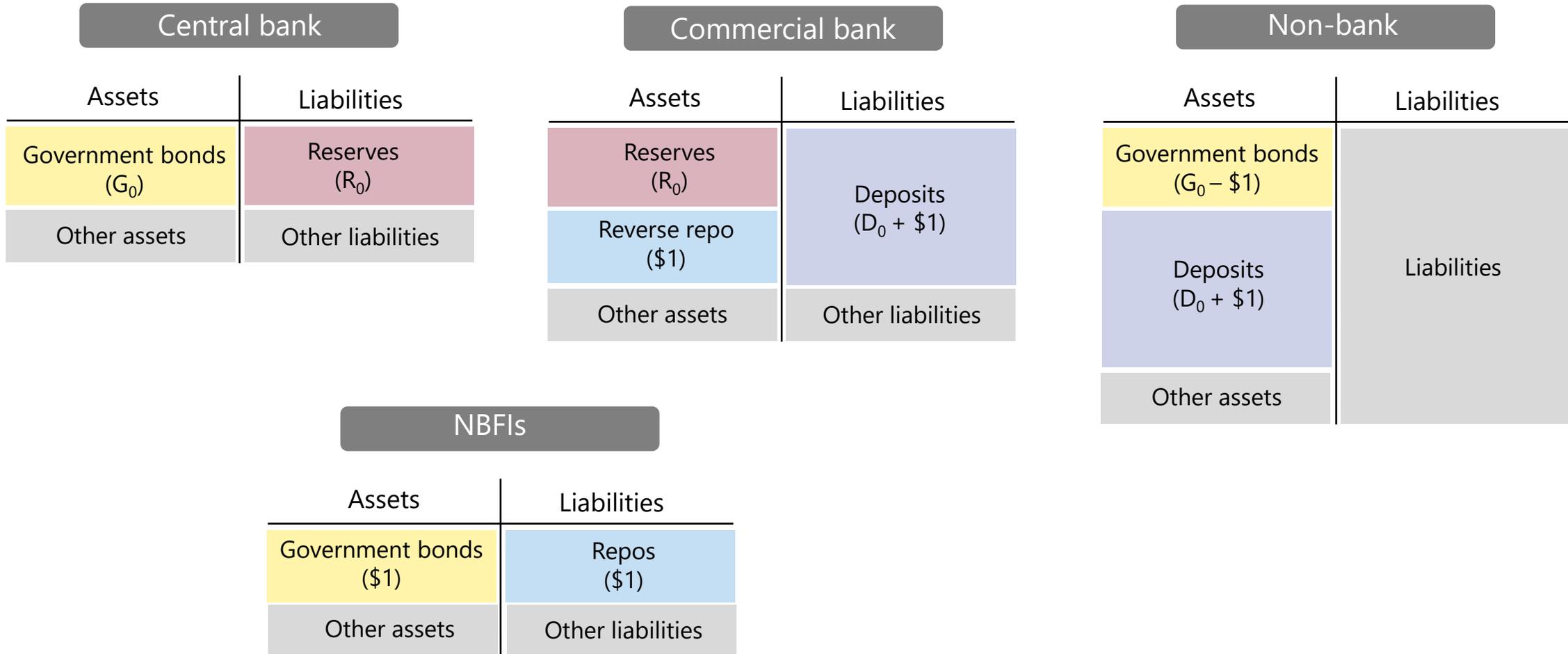
Sources: Avdjiev et al (2026b); Federal Reserve Bank of St Louis; BIS locational banking statistics by residence.

# What are the consequences of reducing the bond holdings of the central bank?

Central bank		Commercial bank		Non-bank	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Government bonds ( $G_0 + \$1$ )	Reserves ( $R_0 + \$1$ )	Reserves ( $R_0 + \$1$ )	Deposits ( $D_0 + \$1$ )	Government bonds ( $G_0 - \$1$ )	Liabilities
Other assets	Other liabilities	Other assets	Other liabilities	Deposits ( $D_0 + \$1$ )	
				Other assets	

Source: Avdjiev et al (2026a).

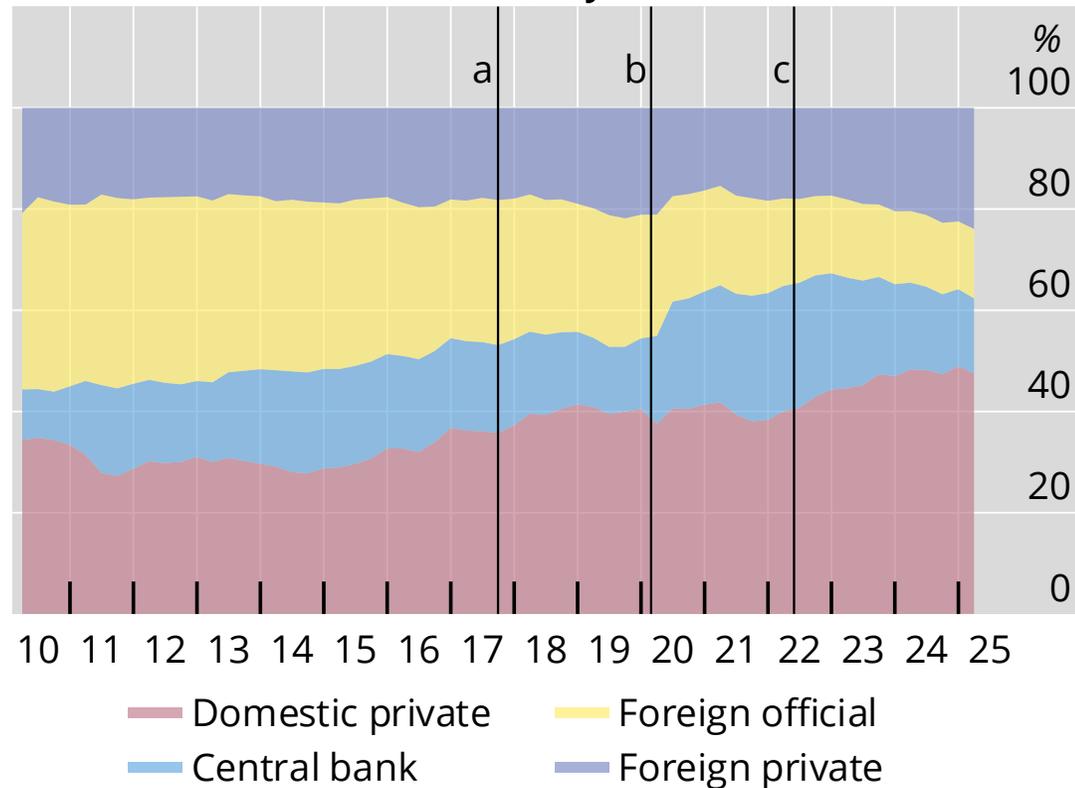
# Ratchet effect on deposits suggests that new buyers of bonds have stepped in



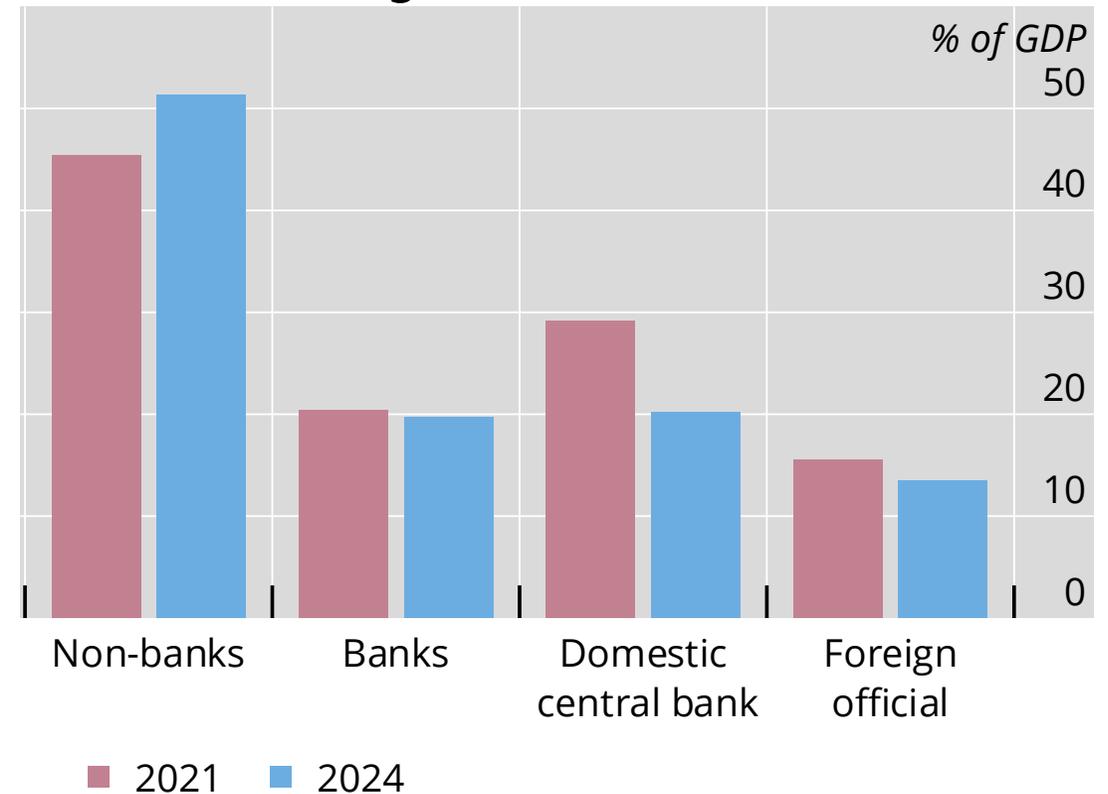
Source: Avdjiev et al (2026a).

# Private sectors holders have increasing heft as investors in sovereign bonds

Share of US Treasuries, by sector of holder



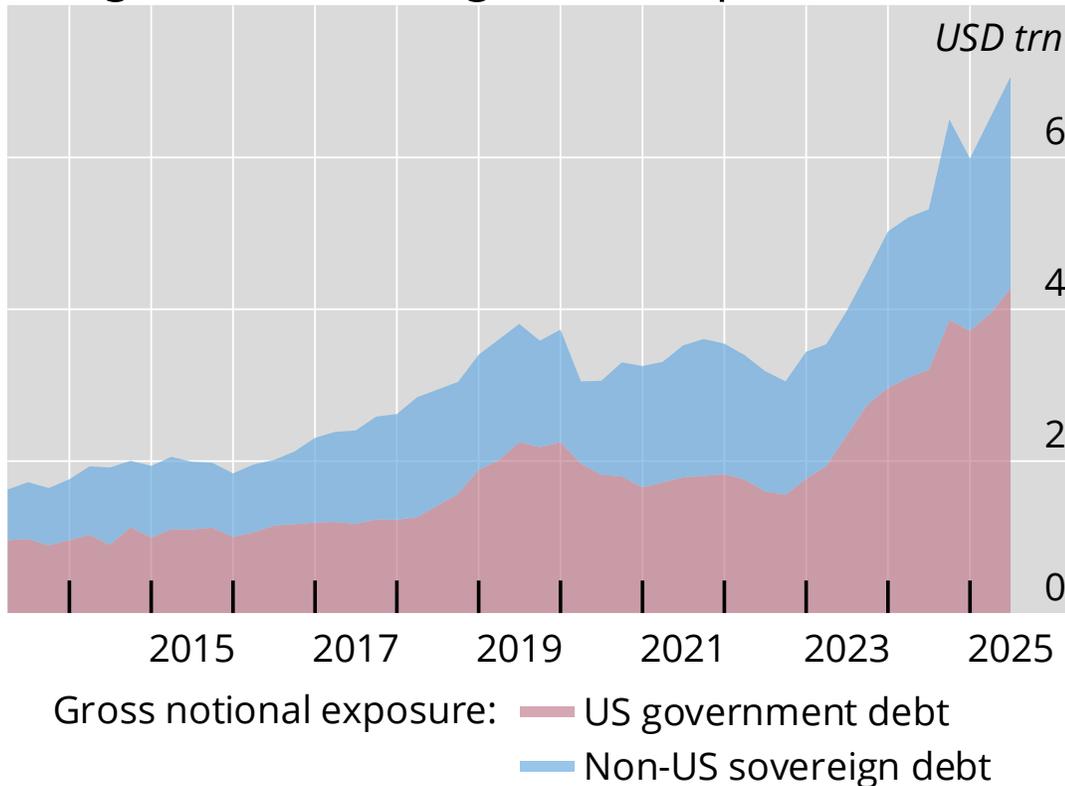
Holder of AEs' government debt



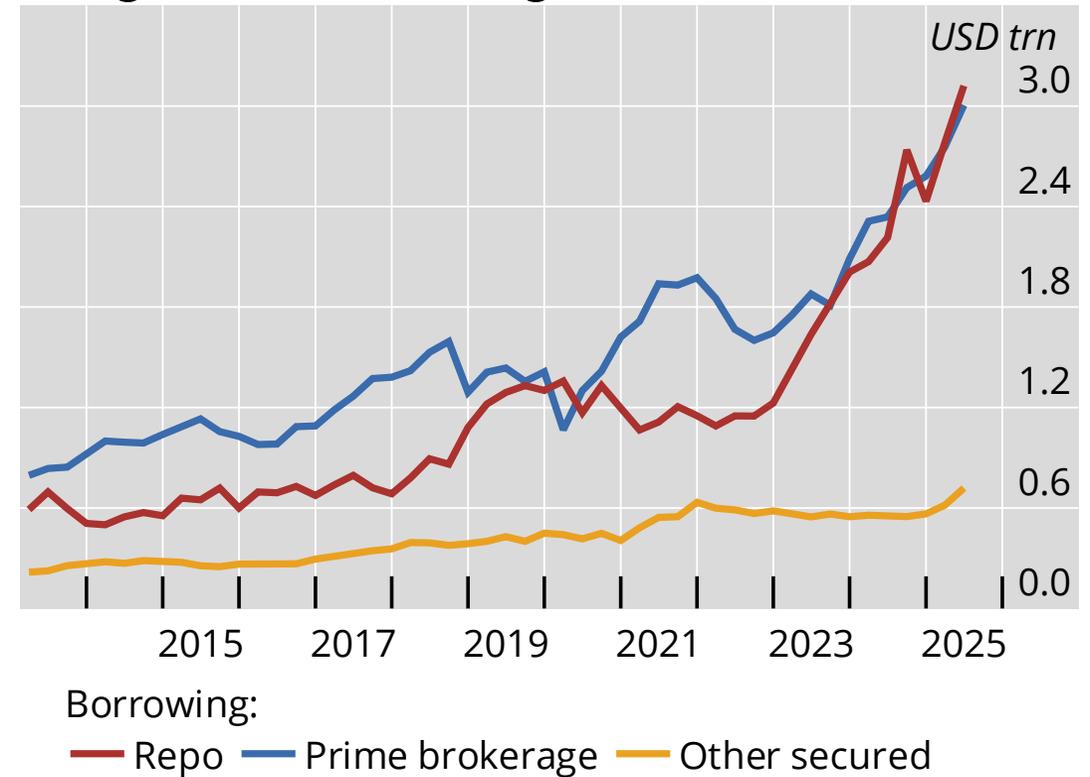
Sources: Arslanalp and Tsuda (2012); Barth et al (2025); Hernández de Cos (2025); BIS (2025); US Financial Accounts; US Treasury International Capital (TIC) data.

# Hedge funds have growing presence in sovereign bond markets; their growth has been enabled by repo borrowing

## Hedge fund sovereign debt exposures



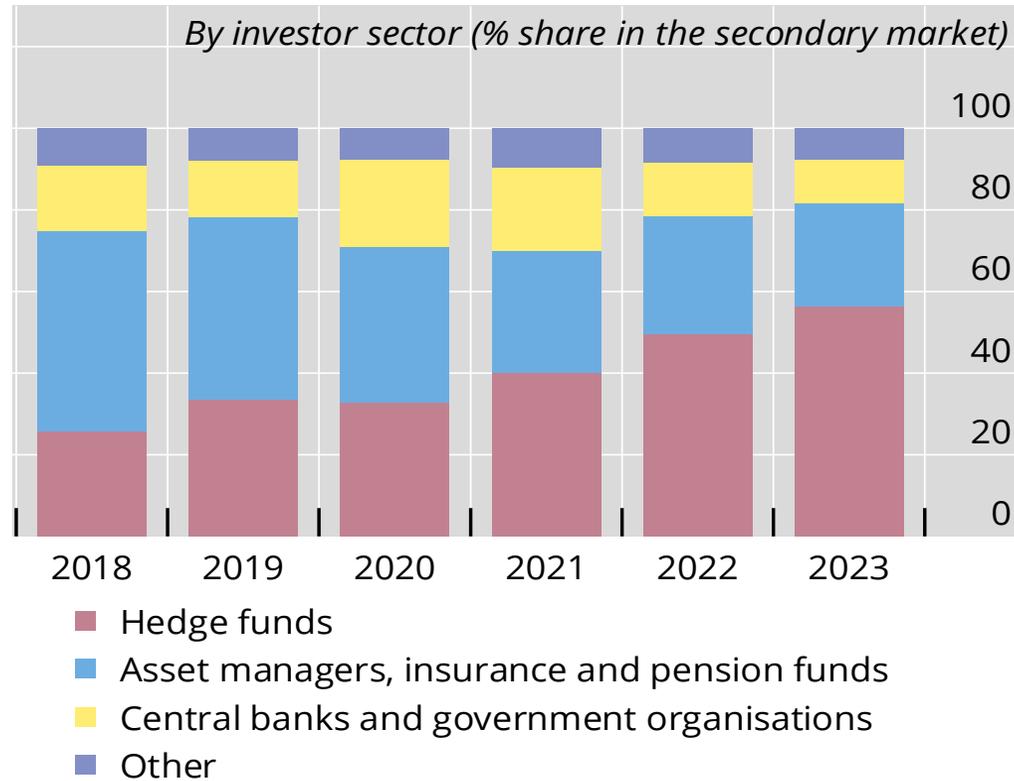
## Hedge fund borrowing sources



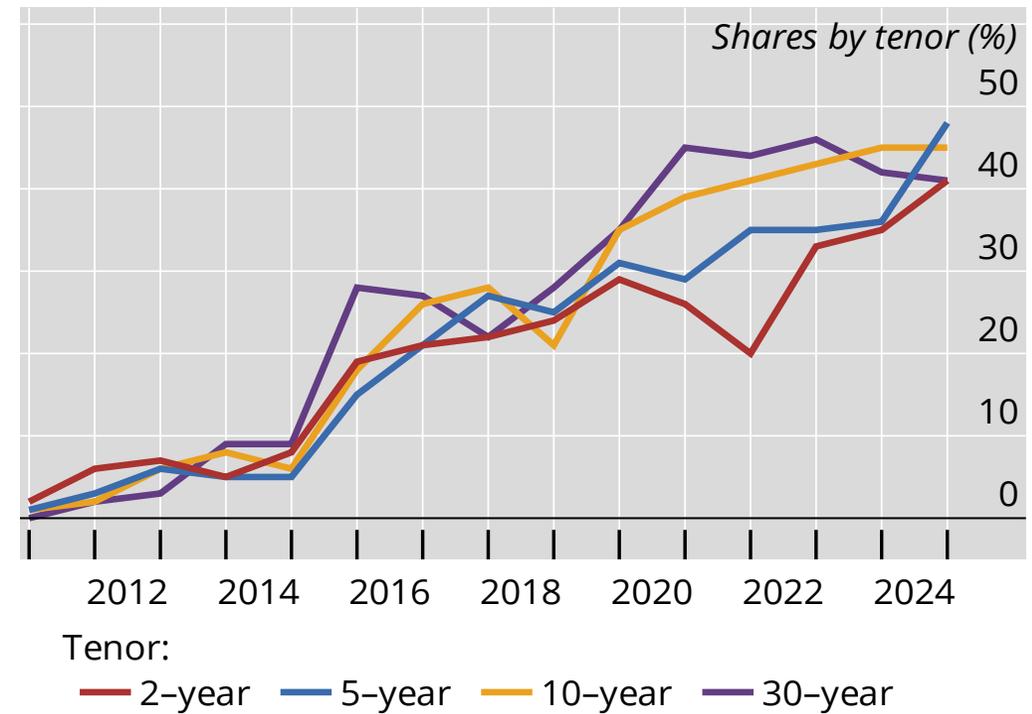
Sources: Hernández de Cos (2025); BIS (2025); Office of Financial Research.

# Hedge funds have also increased their non-US government bond holdings

Electronic trading volumes in the euro area government bond markets



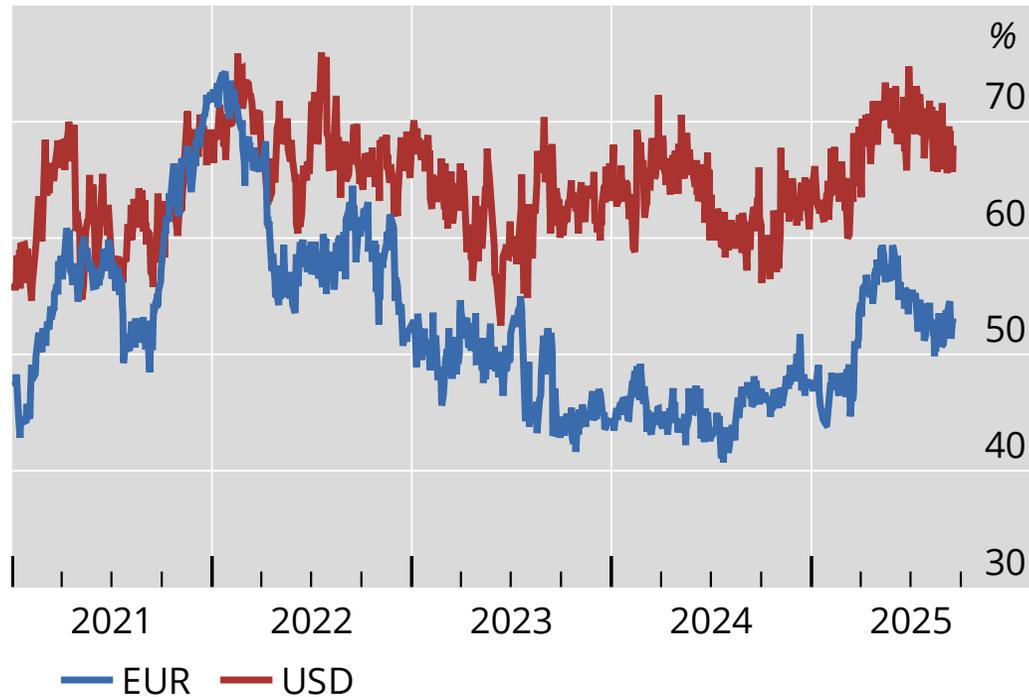
Government of Canada bonds allocated to hedge funds



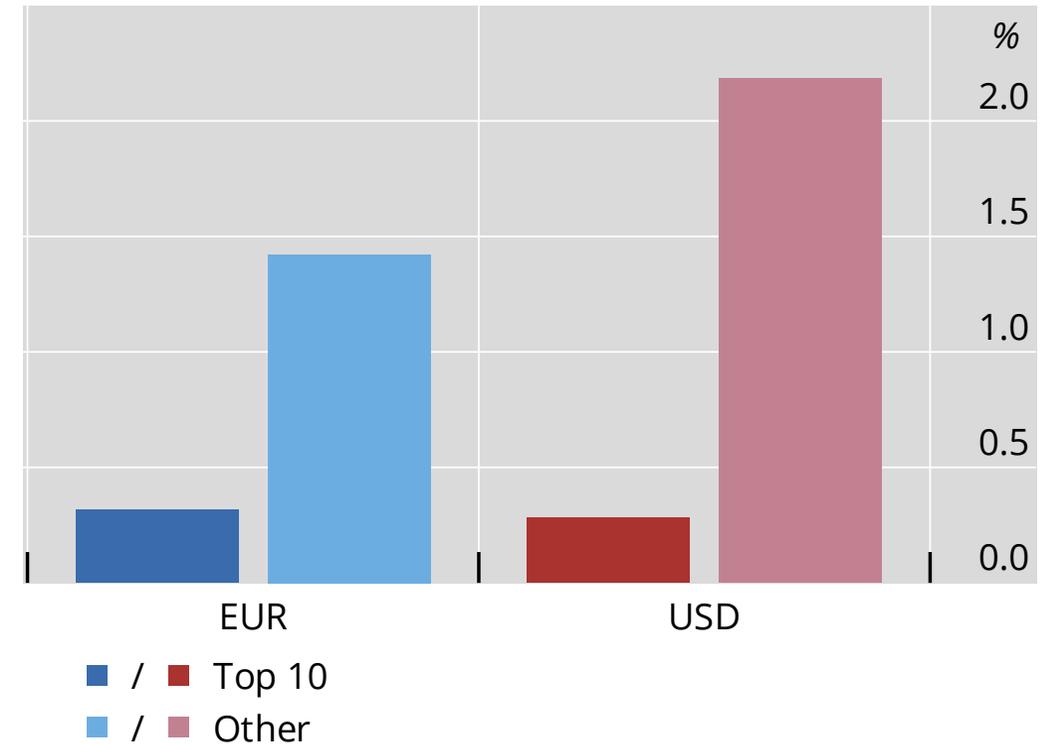
Sources: Ferrara et al (2024); Hernández de Cos (2025); Bank of Canada (2025); BIS (2025).

# Low repo haircuts allow high leverage, especially by largest hedge funds

Share of zero haircuts in hedge fund cash borrowing

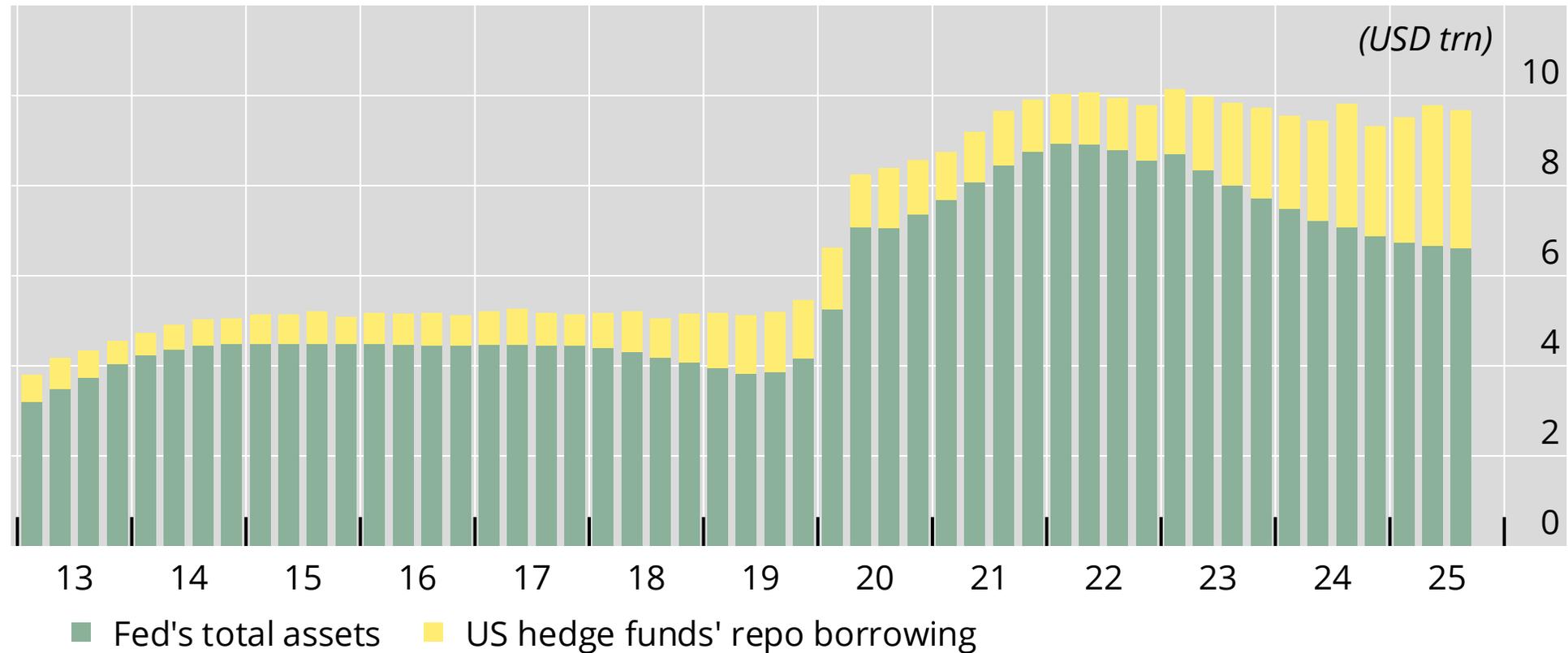


Volume-weighted average haircuts with hedge fund cash borrowers



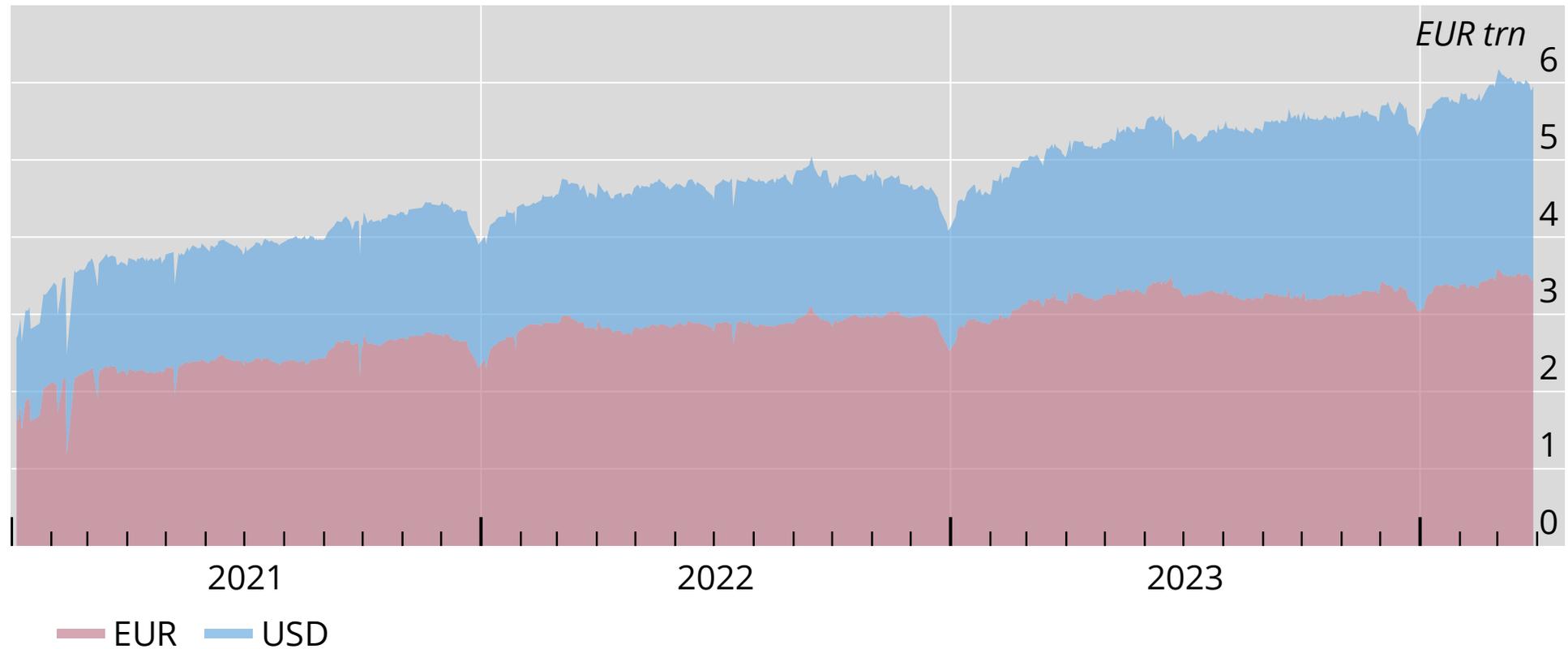
Sources: Hermes et al (2025b); Euro area Securities Financing Transactions Data Store (SFTDS).

The ratchet effect on dollar deposit growth can be seen when hedge funds' repo borrowing is superimposed on the Federal Reserve's balance sheet



Sources: Avdjiev et al (2026b); Federal Reserve Bank of St. Louis; BIS locational banking statistics by residence.

Outstanding repos in the US is part of the global total; outstanding dollar repos in the euro area is also substantial



Source: Hermes et al (2025a).

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