



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Toss a stablecoin to your banker

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Stablecoins' impact on banks' balance  
sheets and prudential ratios

[Occasional Paper Series No 353](#)

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Disclaimer: This paper should not be reported as representing the views of the European Central Bank (ECB). The views expressed are those of the authors and do not necessarily reflect those of the ECB.

## Setting the stage – what's a stablecoin?

**Stablecoin are crypto-assets pegged to a currency, commodity or index.** Under EU law, regulated stablecoins pegged to a single currency are electronic money tokens (E-money tokens)

**Electronic money is a balance with a bank or e-money issuer**

**Difference between E-money & bank deposit:** no deposit guarantee scheme, and no interest can be paid on your E-money balance

**Difference between tokenized e-money and traditional e-money:**

Traditional e-money are claim recorded on centralized ledger, usually by the issuer whereas tokenized e-money is transferred and stored using distributed ledger technology or similar technology.

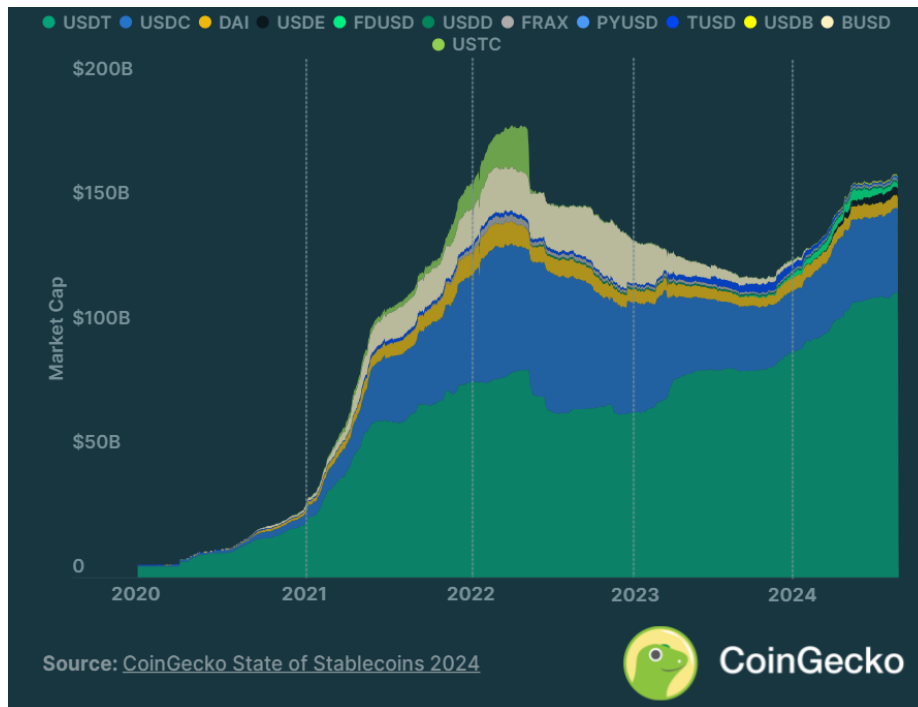
Traditional e-money involves a client relationship between issuer and the balance holder, the holder has a contractual claim to issuer, while tokenized e-money gives the token holder a statutory right to the reserves.

# Stablecoins - Key facts

- **Growing market**
  - Nothing in \$2014, \$5bn. in 2020, \$150bn. in 2024
- **Key drivers**
  - Primary trading pairs on global exchanges
  - “safe asset” in the crypto-ecosystem and “stable” collateral on DeFi protocols
  - Global access to dollar
  - Payment instrument
- **Dollarized & concentrated market**
  - 99.8% of stablecoin in USD and 0.2% in EUR (250mm).
  - Tether (USDT) and Circle (USDC) issue 91% of the market.
- **Very profitable business model for largest actors**
  - Tether = \$6.2bn net income in 2023.
- **Relevant for CBs**
  - +-100bn worth of treasuries (0.3% of total US Federal debt) and billions in banks deposits backing stablecoins value.
  - Today more monthly transactions in stablecoins than with VISA\* (\$1.4 trillion transactions with top 3 stablecoins vs. \$ 1.2 trillion for VISA).
  - 326M transactions

## USD Stablecoins by Market Cap

Daily Market Capitalization of Stablecoins, Jan 2020 - Aug 2024



## Stablecoin issuers must hold **AT LEAST 30%** of their reserves as banks deposits...

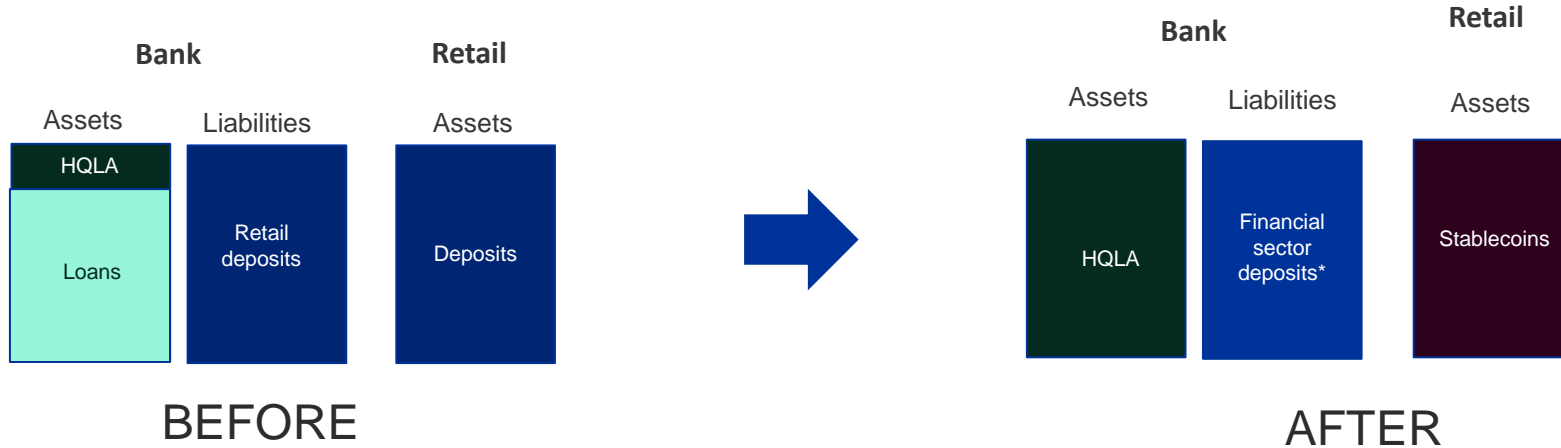
So what happens to banks' balance sheet when retail customers decide to hold stablecoins rather than bank deposits?

And what is the impact on Banks...

1. **Short-term liquidity**
2. **Risk weighted Assets** (risk weighted capital requirements)
3. **Leverage ratio** (non-weighted capital requirements)

# What happens if retail customers move from holding deposits to holding stablecoins ?

Scenario 1 => The bank itself issues stablecoins and all their own retail deposits move to stablecoins



\*When the bank **does not** know the customer (like 99.9% of stablecoins in circulation) they must treat these liability with 100% outflow rate

*LCR decreases*

*No change to leverage ratio (same balance sheet size)*

*RWA density improves (HQLA better risk density than loans)*

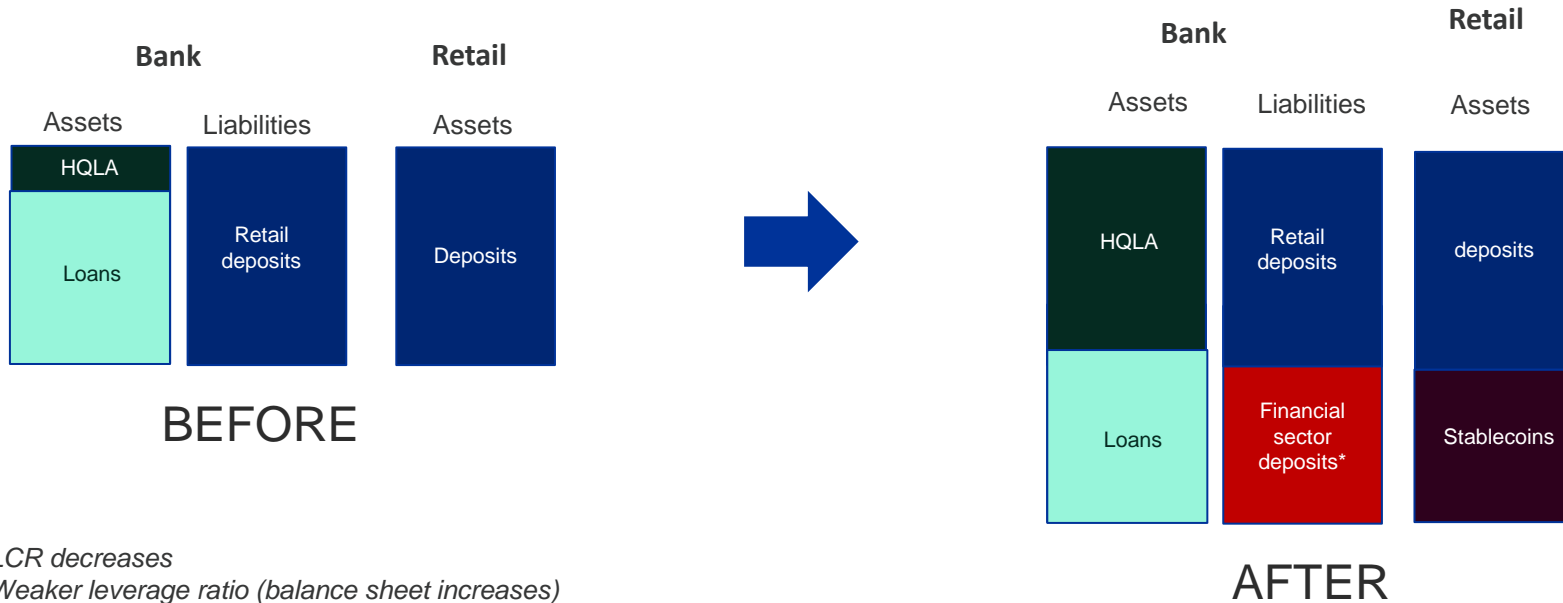
*Improves capital improves but...*

*Can't keep loan portfolio due to liquidity pressure*

*Stablecoin liabilities cannot be used as source of funding for banks*

# What happens if retail customers move from holding deposits to holding stablecoins ?

Scenario 2 => The bank itself issues stablecoins and onboard new retail deposits moving to stablecoins



*LCR decreases*

*Weaker leverage ratio (balance sheet increases)*

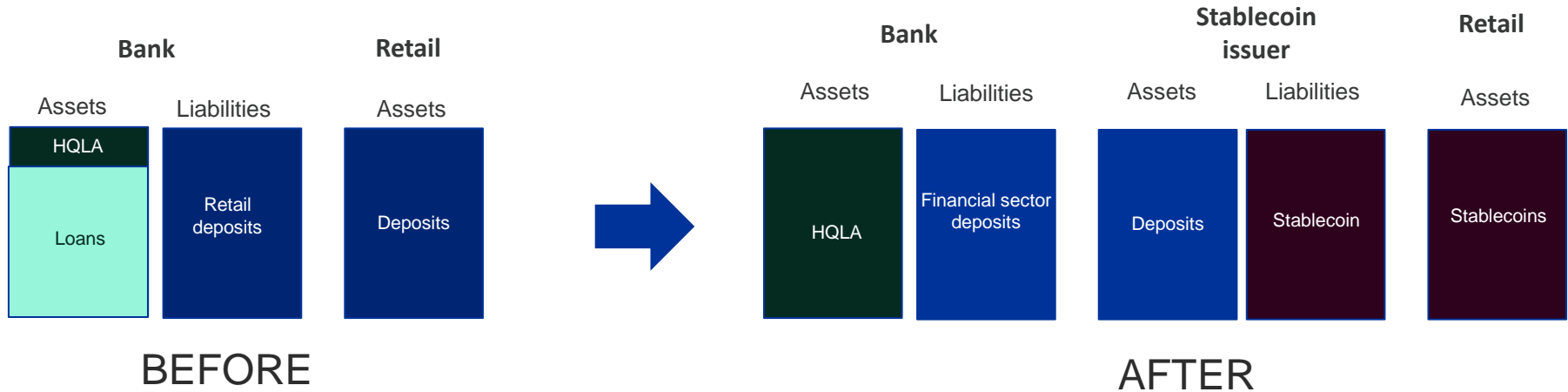
*RWA density improves (adding low density assets to high density assets – weighting improves)*

*Negligible changes to RWAs (new HQLAs don't carry material credit risks)*

*Stablecoin issuer deposit cannot be used as source of funding for banks*

# What happens if retail customers move from holding deposits to holding stablecoins ?

Scenario 3 => Non-bank stablecoin issuer keeps 100% of reserves as bank deposits (Japanese scenario)



*Similar to scenario 1*

*LCR decreases*

*No change to leverage ratio (same balance sheet size)*

*RWA density improves (HQLA better risk density than loans)*

*Improves capital improves but...*

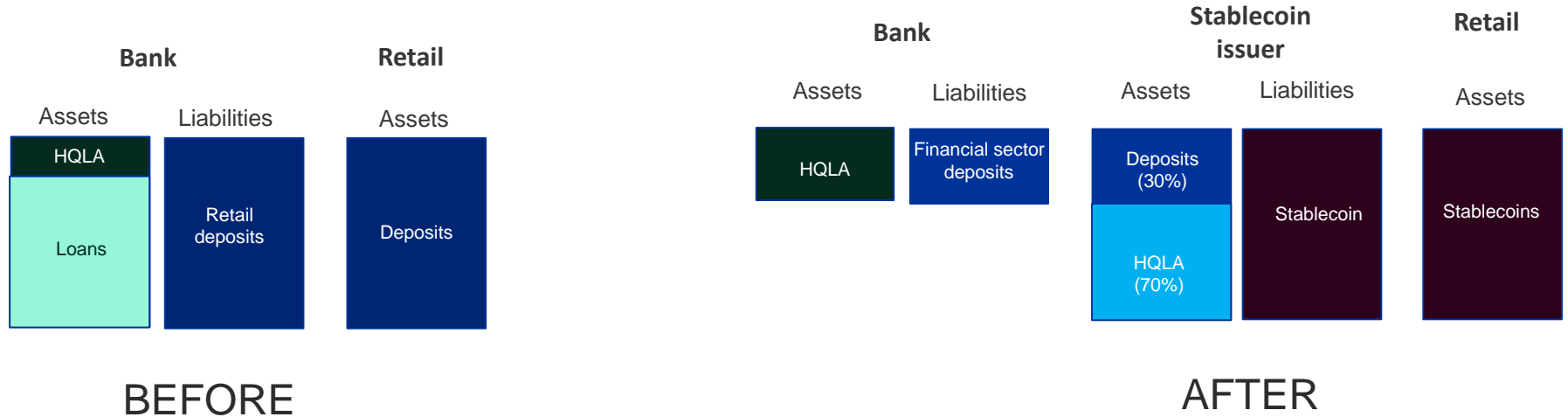
*Can't keep loan portfolio due to liquidity pressure*

*Stablecoin issuer deposit cannot be used as source of funding for banks*

\*Japanese crypto regulation requires that 100% of stablecoins reserve are held at Bank deposits

# What happens if retail customers shift from holding deposits to holding stablecoins ?

Scenario 4 => Non-bank stablecoin issuer keeps 30% of reserves as bank deposits and 70% as HQLAs (EU scenario\*)



Similar to scenario 1  
except...

Leverage ratio improves (balance sheet decreases)

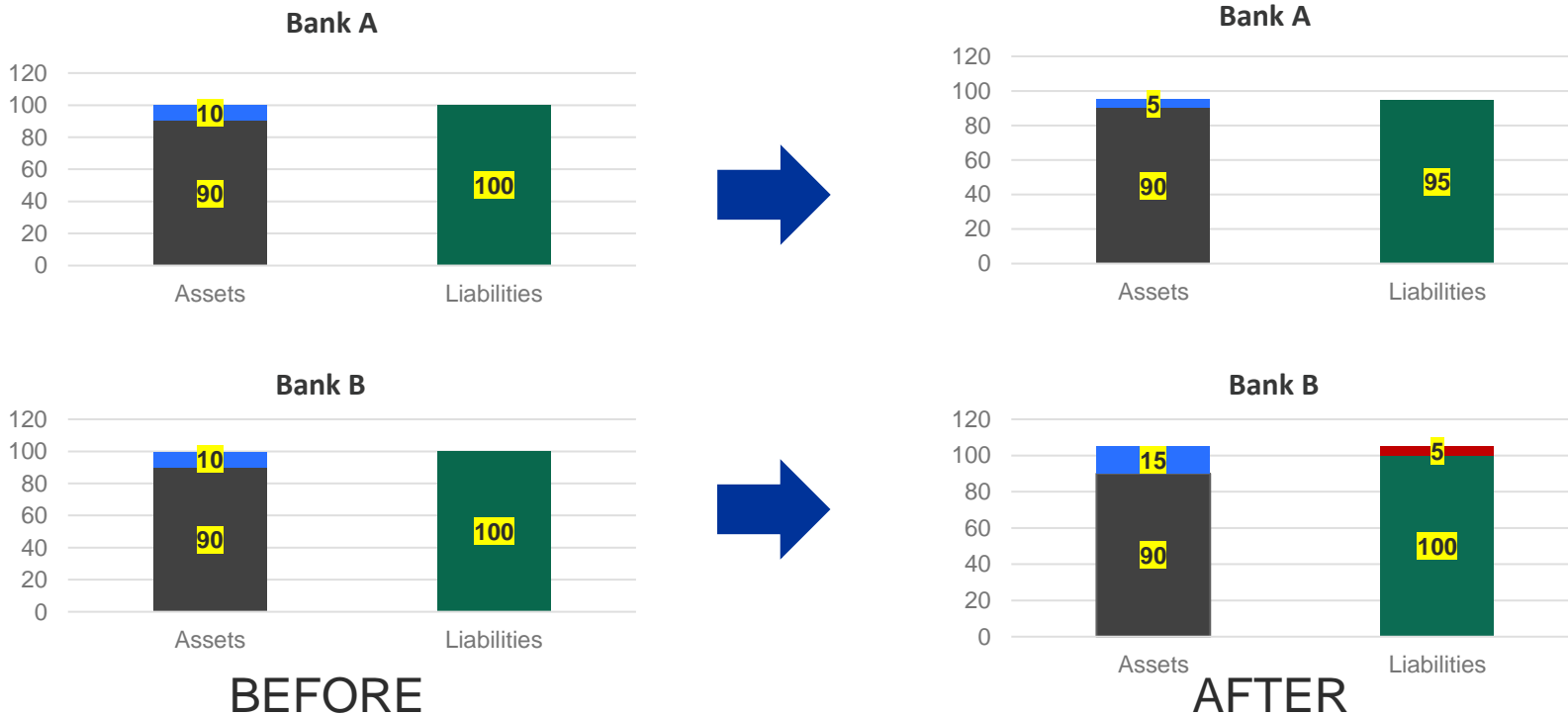
*Still can't use stablecoin issuer deposit cannot be used as source of funding for banks*

\*MiCAR requires that at least 30% of stablecoins reserve are held at Bank deposits



# What happens if retail customers from a Bank A buy stablecoins from an Issuer banking with bank B? (1/2)

Detailed impact



# What happens if retail customers from a Bank A buy stablecoins from an Issuer banking with bank B? (2/2)

Banks A & B (before the transfer)

Assets		Liabilities and equity	
HQLAs (reserves)	€10 billion	Retail deposits (5% outflow rate)	€100 billion
Illiquid loans	€90 billion		
<b>Total assets</b>	<b>€100 billion</b>	<b>Total liabilities and equity</b>	<b>€100 billion</b>
LCR = €10 billion / (€100 billion x 0.05) x 100% = 200%			

Retail customers buying stablecoin issued by another bank or by a nonbank stablecoin issuer in the other banks weaken the LCR of both sending and receiving bank

Bank A (after the transfer)

Assets		Liabilities and equity	
HQLAs (reserves)	€5 billion (-€5 billion)	Retail deposits (5% outflow rate)	€95bn (-€5 billion)
Illiquid loans	€90 billion		
<b>Total assets</b>	<b>€95 billion (-€5 billion)</b>	<b>Total liabilities and equity</b>	<b>€95bn (-€5 billion)</b>
Total net cash outflows = retail deposits * 5%			
Total net cash outflows = €95 billion x 5% = €4.75 billion			
LCR = (€5 billion / €4.75 billion) x 100% = 105.26% <sup>38</sup>			

Bank B (after the transfer)

Assets		Liabilities and equity	
HQLAs (reserves)	€15 billion (+€5 billion)	Retail deposits (5% outflow rate)	€100 billion
Illiquid loans	€90 billion	Deposits from financial institutions (100% outflow rate)	€5 billion (+€5 billion)
<b>Total assets</b>	<b>€105 billion (+€5 billion)</b>	<b>Total liabilities and equity</b>	<b>€105 billion (+€5 billion)</b>
Total net cash outflows = (5% * retail deposits) + (100% * deposits from financial institutions)			
Total net cash outflows = (€100 billion x 5%) + (€5 billion x 100%) = €5 billion + €5 billion = €10 billion			
LCR = (€15 billion / €10 billion) x 100% = 150%			

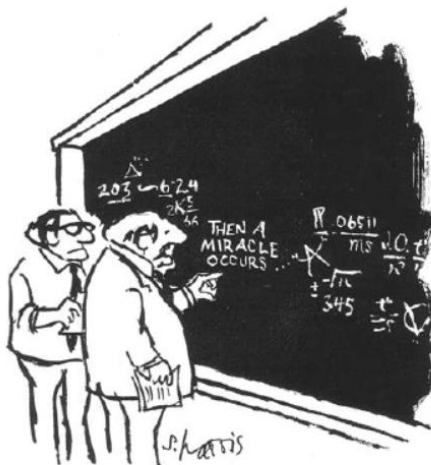
## Conclusion

*“(...) stablecoins are effectively gathering insured deposits and transforming them into uninsured deposits and other wholesale funding”\**

Issuing stablecoins or onboarding non-bank stablecoin deposits always weakens a bank's liquidity and capacity to fund traditional banking activity

To go further: My paper - [Toss a stablecoin to your banker - Stablecoins' impact on banks' balance sheets and prudential ratios](#)

## Questions ?



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

## Annex - Liquidity Coverage Ratio 101

$$\text{LCR} = \frac{\text{High Quality Liquid Assets}}{\text{Net outflows over 30 days}} \geq 100\%$$

- Stablecoin issuers are financial sector deposits
- Banks' stablecoins are treated as financial sector deposits when the bank does not know the holder

Conversion rate between liability and outflow for different types of clients

