



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Granular data: a giant leap for decision-making

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**Sixth Statistics Conference**

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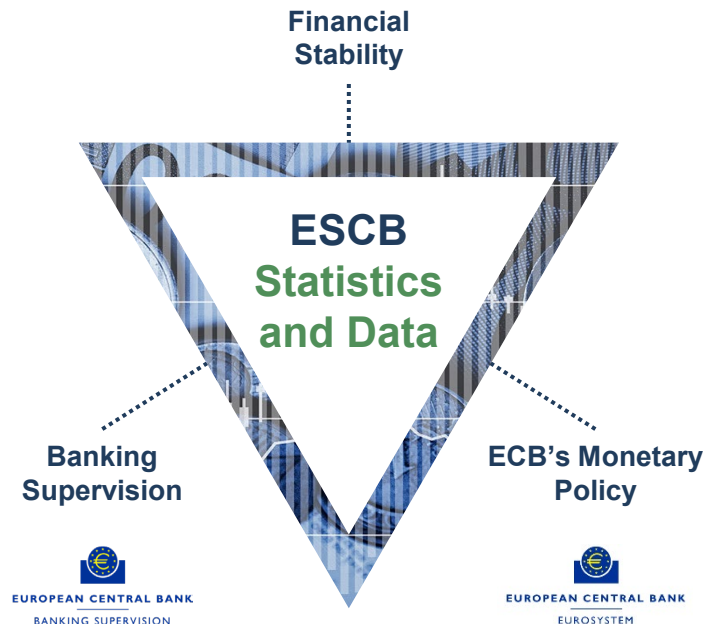
# Overview

- 1 The global financial crisis as a game changer
- 2 Granular data on credit risks
- 3 Granular data on market activity
- 4 The road ahead

# 1

## The global financial crisis as a game changer

# Data for decision-making in the European System of Central Banks



## Essential role in monetary policy

Crucial for the effective formulation of ECB's monetary policy, providing the necessary data to guide economic decisions and actions within the euro area.

## Support for policy functions

ESCB statistics play a significant role also in other policy functions, incl. financial stability, prudential supervision and oversight of payment systems.

## Euro area focus

The primary focus is the euro area, ensuring that the data collected and analysed is directly applicable to the economic conditions and requirements of the region.

## ECB regulation and governance

As the lawmaker, the ECB regulates ESCB statistics, ensuring that data collection, compilation and dissemination adhere to legal frameworks.

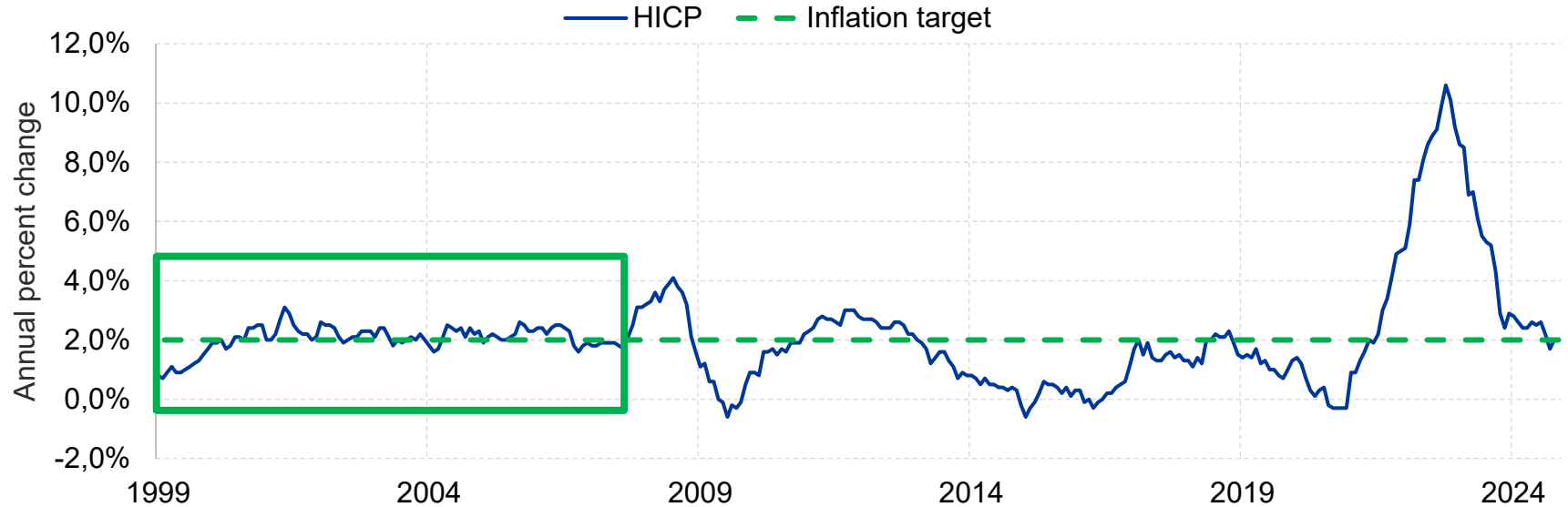
## Cooperation and follow of standards

The success depends on robust cooperation among European institutions and adherence to strict standards, ensuring consistency, accuracy, and data reliability.

# Before the global financial crisis

## Chart

HICP inflation and price stability (*annual percent change*)



Source: ECB.

# Early monetary union



**For the first 10 years of monetary union  
decision making at the ECB relied on  
macroeconomic statistics:**



Monetary aggregates M3 (1<sup>st</sup> pillar)



Integrated non-financial and financial  
accounts for the euro area (2<sup>nd</sup> pillar)



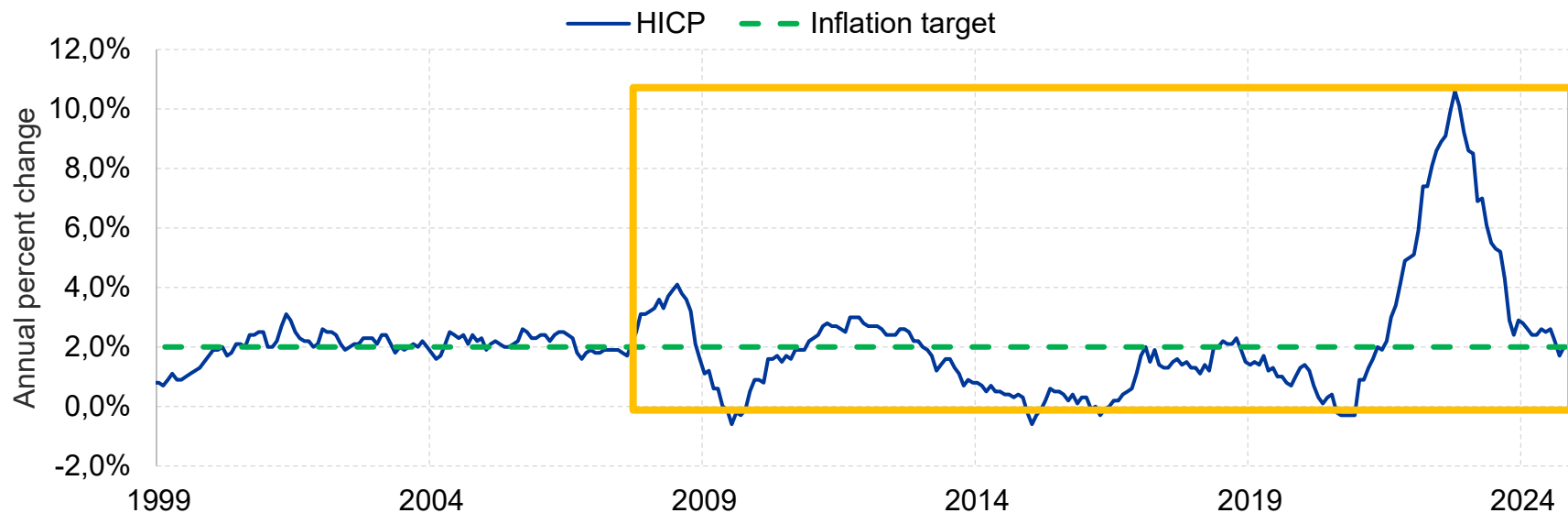
Balance of payments

Useful to depict broad developments, but  
available after a considerable time lag

# From the global financial crisis onwards

## Chart

HICP inflation and price stability (*annual percent change*)



Source: ECB.

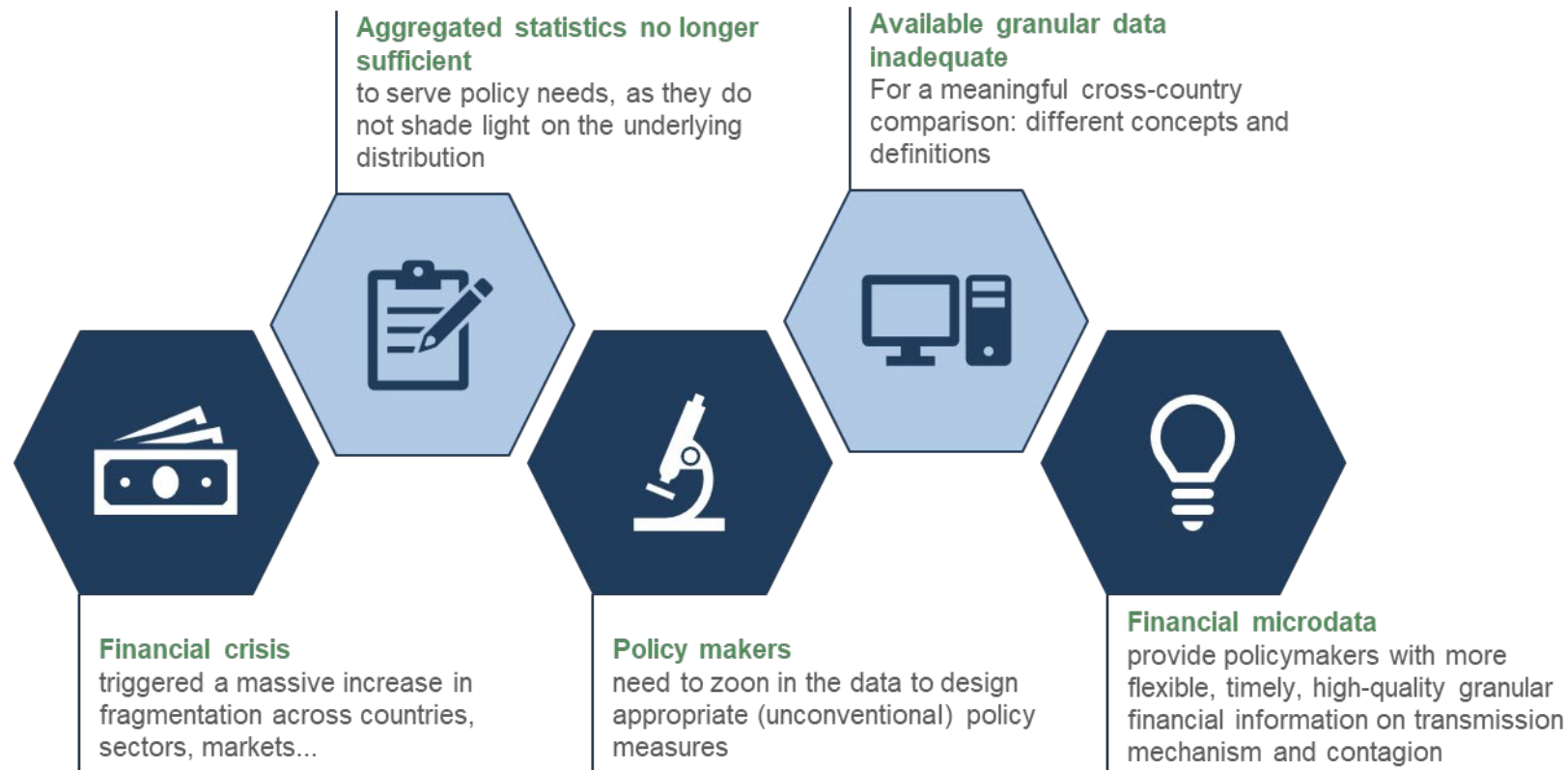
US subprime

Sovereign debt

COVID19

S&D shocks

# The global financial crisis exposed the need to collect granular data





# 2

## Granular data on credit risks

# Policy questions on credit risk

## **Financial loss of Central Banks**

13:08

*If Lehman Brother collapses, what is my loss?*

## **Contagion chains**

13:08

*If a Credit Suisse fails, which bank is exposed to it & could fail?*

## **Banking resolution**

13:09

*Who (e.g. households, foreign investors,...) is hit if a bank fails (who holds its outstanding securities)?*

## **Analysis of concentration risks in the banking sector**

13:10

*Identify large borrowers and concentration risks of lenders and borrowers*

## **Banking risks**

13:11

*What is the exposure of a bank to a collapse of United Airlines? Which bank is mostly affected by a downgrade in the rating of a government security?*

Type something...



# Policy questions on credit risk

## **Evaluation of banks' internal risk models**

13:12

*How is it that two banks assign a different probability of default to securities issued by the same corporation?*

## **“Green” monetary policy**

13:13

*“Green securities” for asset purchases and/or lending targets linked to “green loans” (loans to finance sustainable activities)*

## **Targeted Refinancing Operations**

13:13

*Lending targets by size or sector of the borrower*

## **Credit claim collateral**

13:14

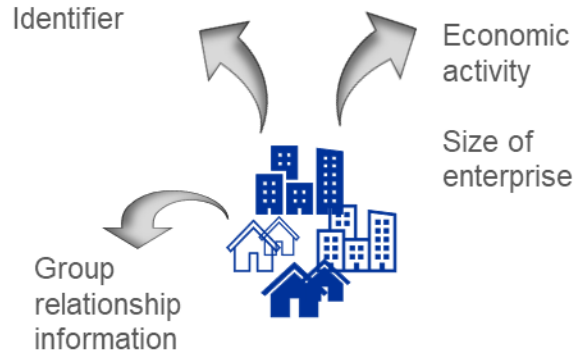
*Link between credit claim collateral and loan-by-loan data*

Type something...

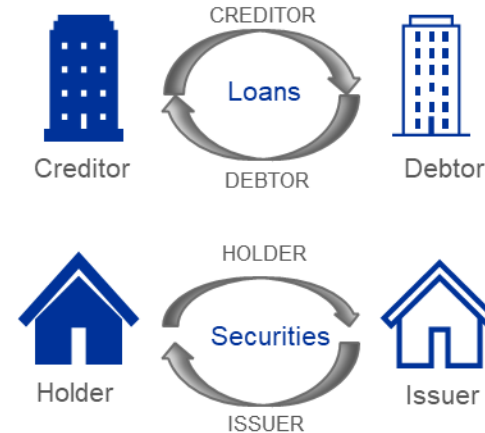


# The answer - Combining information on entities with information on granular loan and securities

## ENTITY INFORMATION

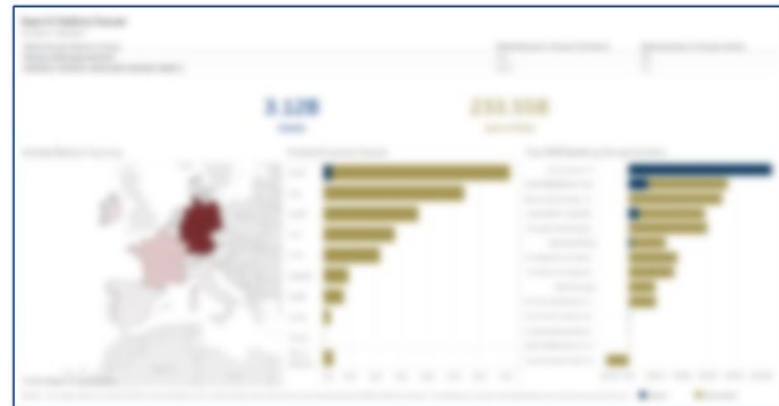


## EXPOSURES

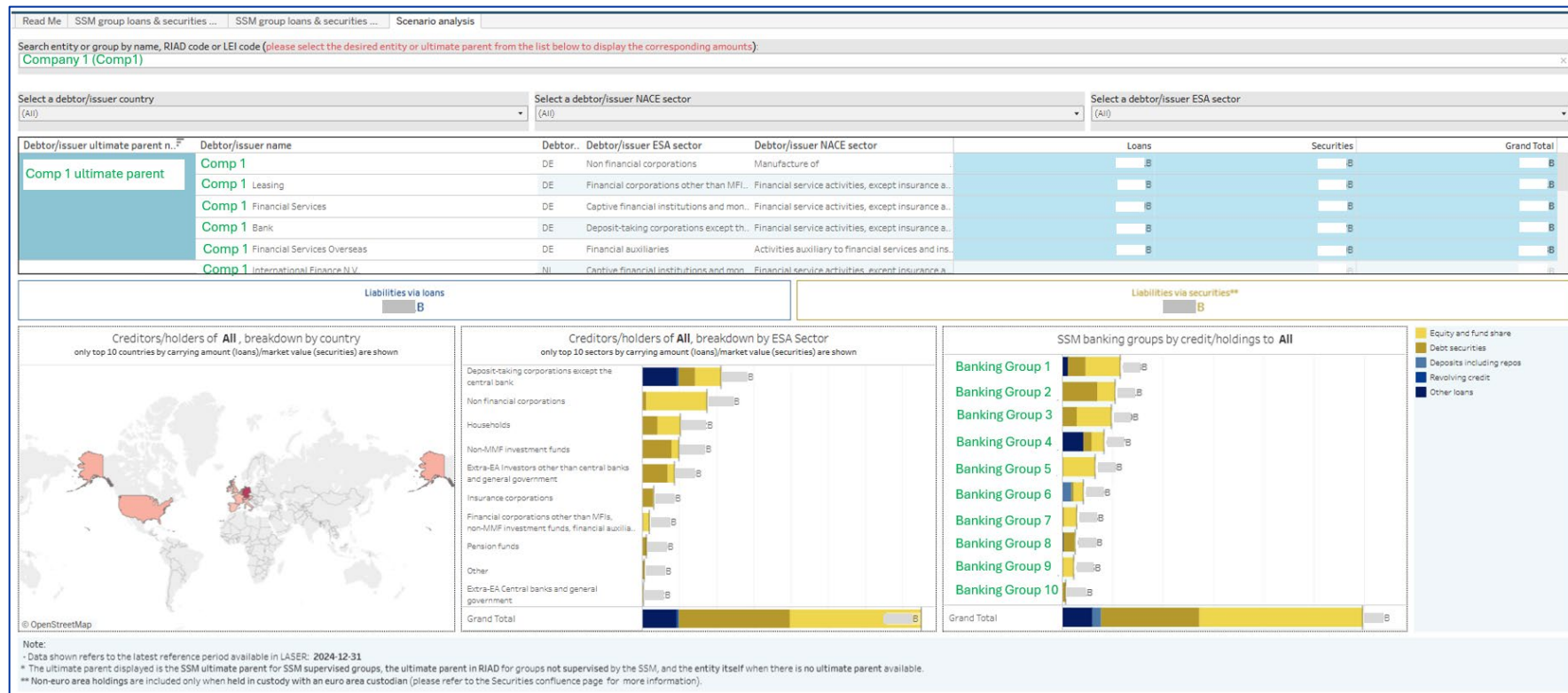


# Analysis of credit risk exposures

- ? **If Lehman Brother collapses**  
the loss for the ECB is XX
- ? **If a Credit Suisse fails**  
the bank most affected in the euro area is XX  
and its exposure is of small
- ? **If Banco Popular fails**  
a significant proportion of its debt is held by Spanish households and therefore an acquisition is a preferred resolution action than bailing in debt holders
- ? **If Evergrande collapses**  
the bank mostly hit in the euro area is XX



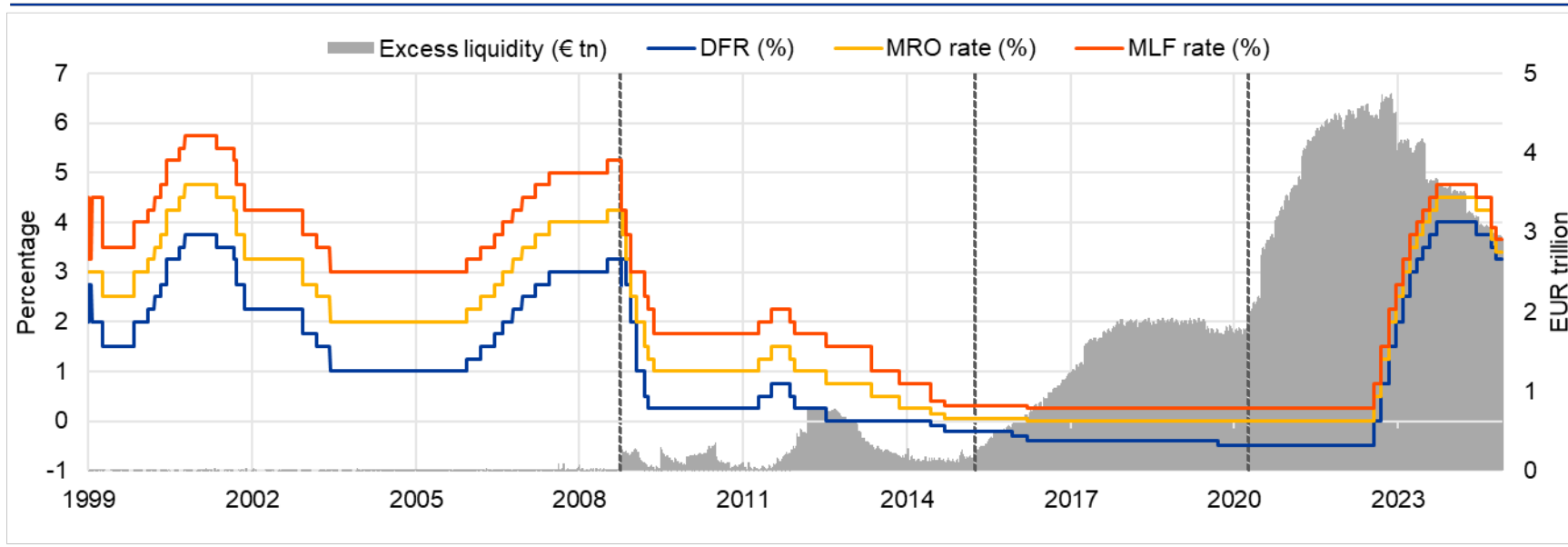
# Analysis of credit risk exposures



# New credit risk data supporting non-standard monetary policy

## Chart

Key ECB interest rates and excess liquidity in the system (*left-hand axis: %; right-hand axis: EUR trillion*)



Source: ECB.

Note: DFR = Deposit Facility Rate, MLF = Marginal Lending Facility Rate, MRO = Main Refinancing Operation Rate, EONIA = Euro Overnight Index Average, €STR = Euro Short-Term Rate.

Effective lower bound

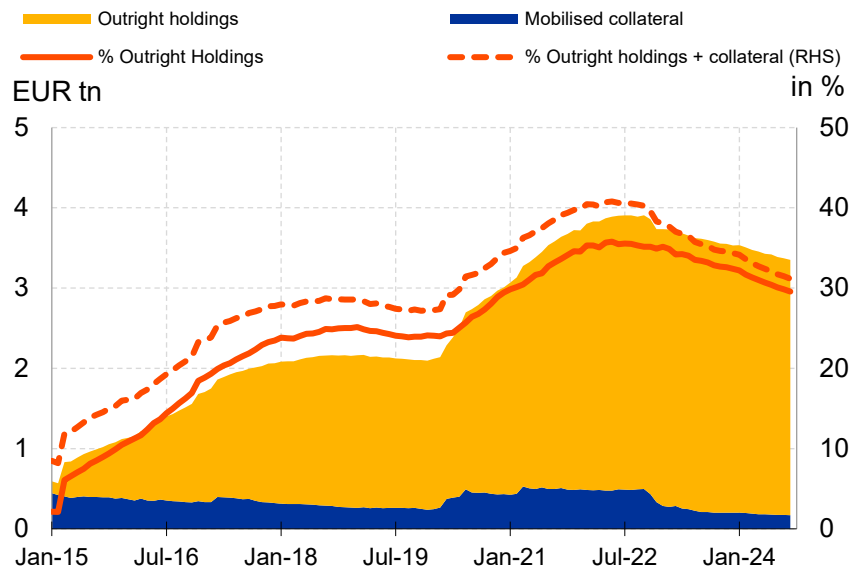
Quantitative Easing

Quantitative tightening

# Support implementation of new targeted lending operations

## Chart A

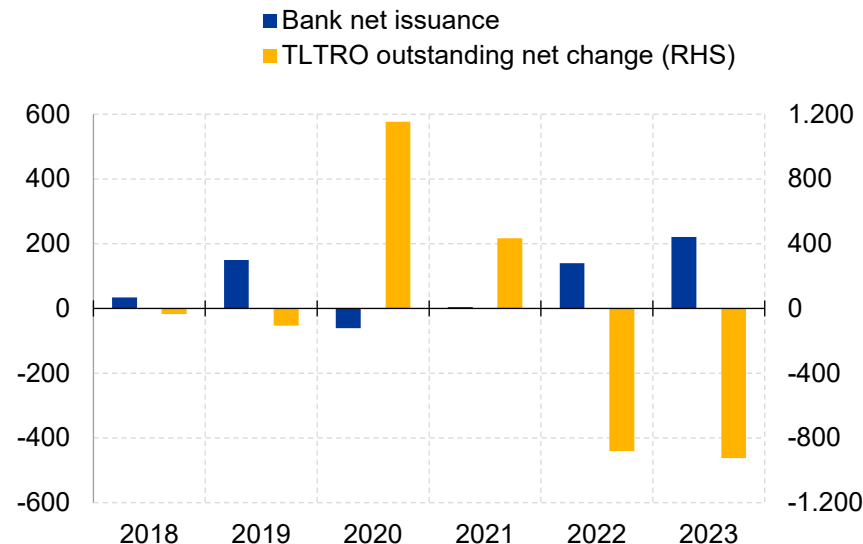
Eurosystem footprint in euro area government bond market  
(LHS: EUR trillion; RHS: %)



Source: ECB.

## Chart B

TLTROs and net issuance by banks  
(EUR billion)

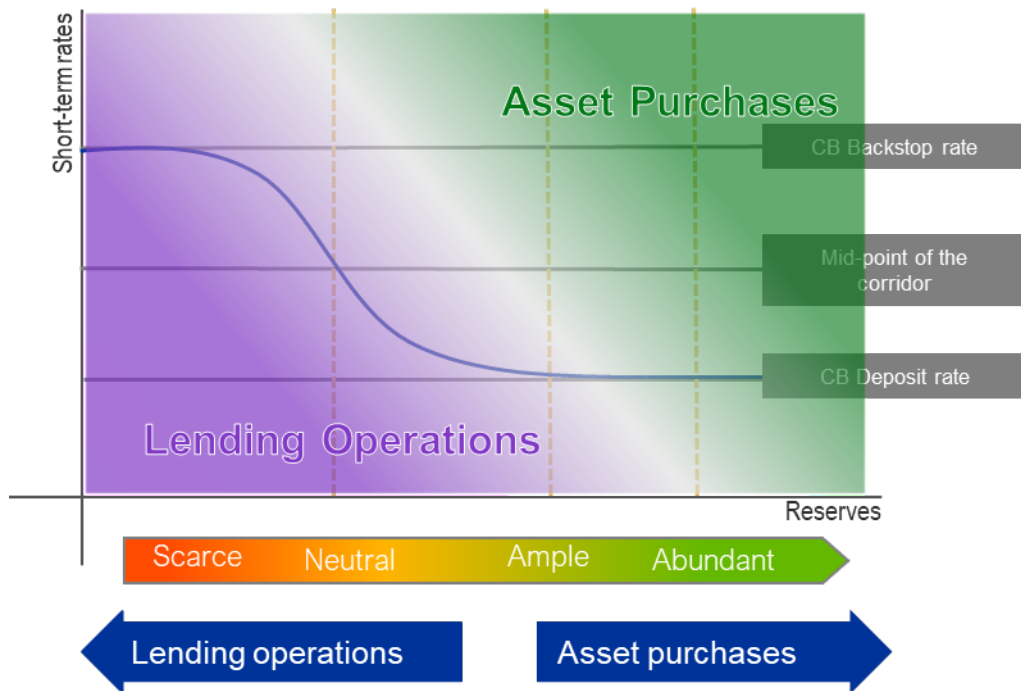


Source: ECB.

Notes: Bank net issuance includes net issuance of covered and senior unsecured bonds by euro area banks, denominated in EUR, and commercial paper net issuance across a range of currencies, converted to EUR.



# Support implementation of future monetary policy implementation strategy



## Reserves

The systems differ in the liquidity environment they require (scarce/balanced vs ample/abundant)

## Steering function

They also differ in terms of whether the rate is anchored at the middle of the corridor (i.e. MRO; implying an opportunity cost for holding reserves) or at the floor (i.e. DFR or below; implying no opportunity cost)

## Instrument used to provide reserve

Finally, they differ in the prominence they give to asset purchases (supply-driven) vs lending operations (demand-driven) in supplying the marginal unit of liquidity

# 3

## Granular data on market activity

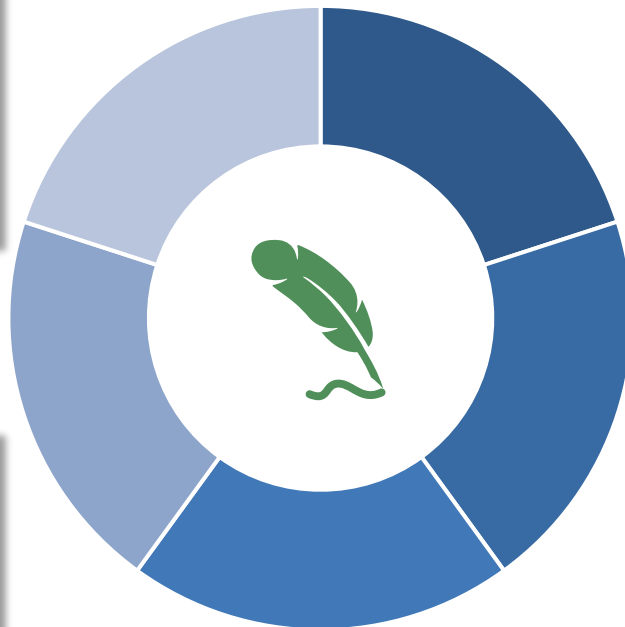
# Policy questions on euro money and derivatives markets

## Short term market rates volatile

departing from policy rate thus  
impairing transmission of  
monetary policy

## Fragmentation

in financial costs across  
countries



## Declining volumes

in interbank and unsecured  
segment

## LIBOR scandal in 2011

→ EONIA benchmark rate for  
euro questioned

## Liquidity

dried up in 2007

# The answer – Collecting daily information on activity in money and derivatives markets

A graphic with a dark blue background featuring faint outlines of financial charts and a pen.

## Money Market Data

Collection of daily data in all four money market segments (unsecured, secured, forex swaps and Overnight Index Swaps (OIS)) from 74 major banks

Collection of daily data in the repo segment from all market participants

A graphic with a dark green background featuring faint outlines of hexagonal patterns and binary code.

## Secured Financing Data

A graphic with a dark blue background featuring faint outlines of a line graph and financial data.

## Derivatives Data

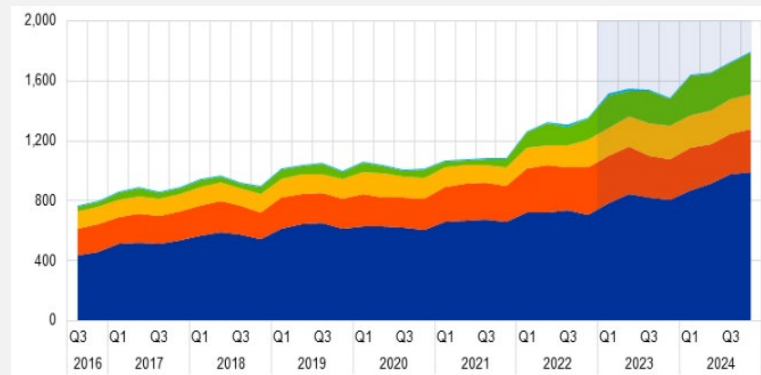
Collection of daily data in the forex and OIS segment from all market participants

# Structural analysis of euro money markets

## Euro money market study

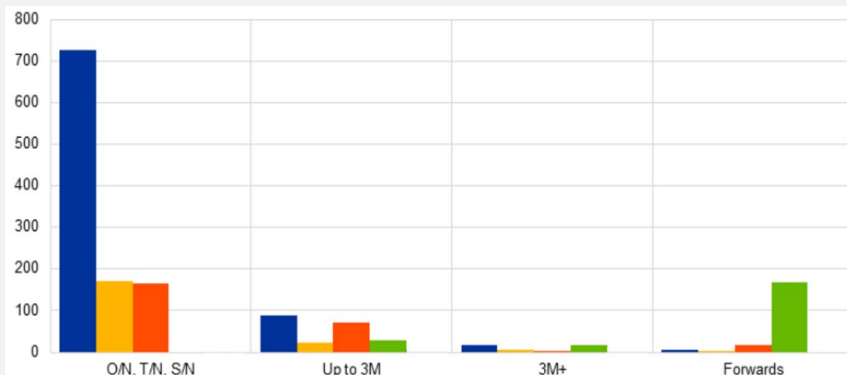
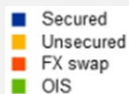
**Chart A**

Daily average volume per segment, EUR billions



**Chart B**

Daily average volume per maturity and segment, EUR billions



# The euro short-term rate (€STR)



In 2011 → LIBOR  
scandal



Standards for  
benchmarks were  
upgraded: real data to  
be used



Benchmark EONIA –  
first point of the  
unsecured rate curve  
for euro - was using  
quotes

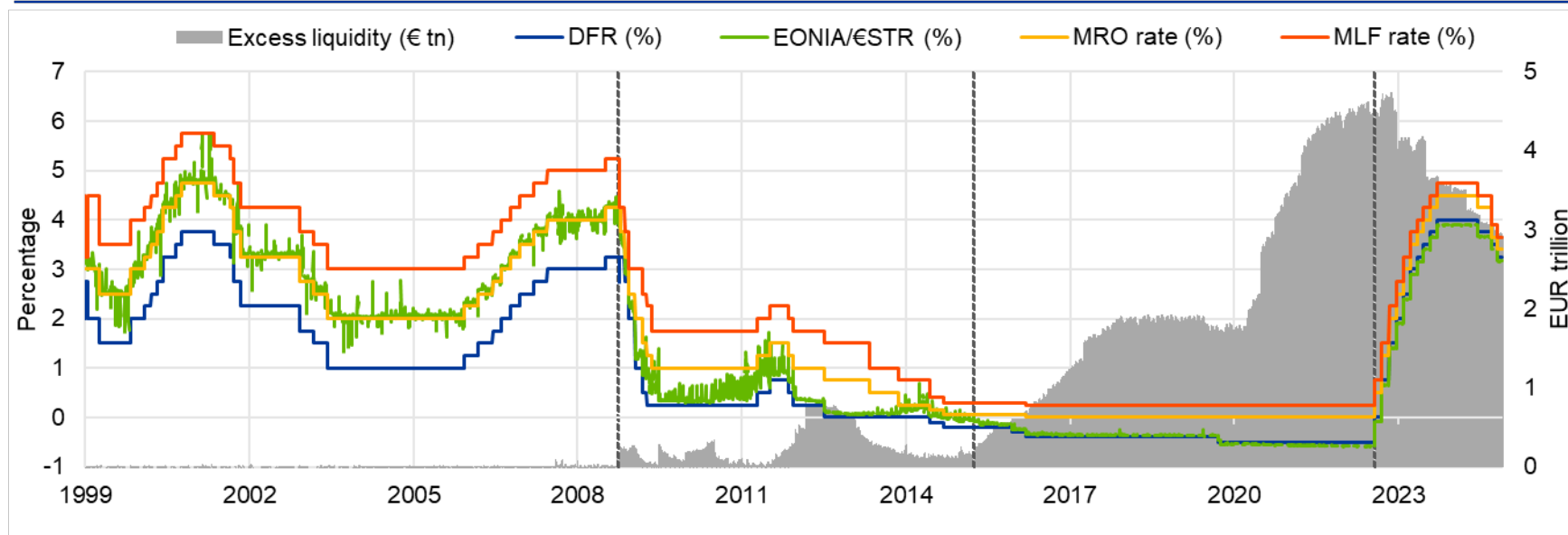


To avoid major market  
disruptions: trillions of  
euro of notional  
amounts in overnight  
index swaps (OISs)  
were linked to EONIA

# €STR → steering of short-term interest rate

## Chart

Overnight market rate (left-hand axis: %; right-hand axis: EUR trillion)



Corridor system

Demand-driven floor

Supply-driven floor

→ Future system?

Sources: ECB.

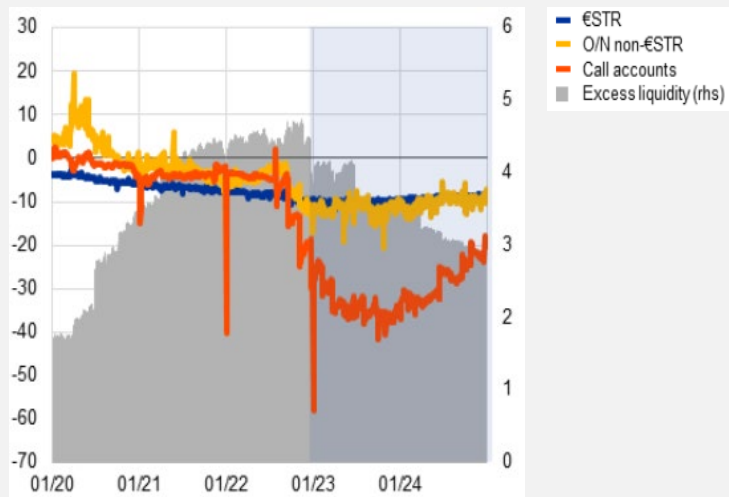
Note: DFR = Deposit Facility Rate, MLF = Marginal Lending Facility Rate, MRO = Main Refinancing Operation Rate, EONIA = Euro Overnight Index Average, €STR = Euro Short-Term Rate.

# Early signals of fragmentation of monetary policy

## Euro money market study

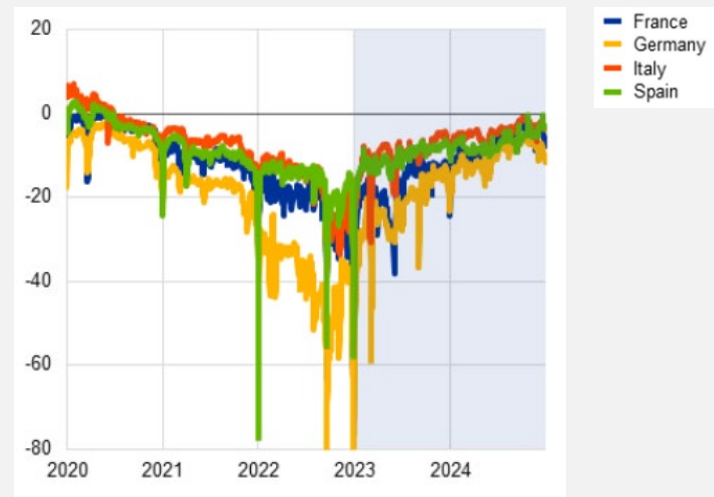
**Chart A**

Unsecured overnight rates spread vs DFR, bp & EUR bn



**Chart B**

One-day repo rates by spreads vs DFR by collateral issuer, bp



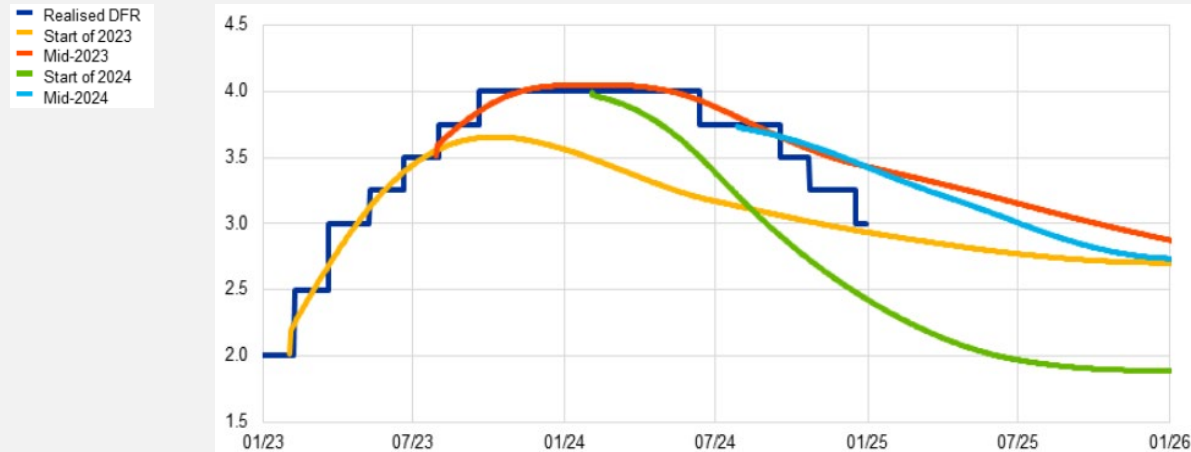


# OIS rates reflect market expectation of forthcoming changes to policy rates

## Euro money market study

### Chart

OIS rates and realized DFR, percentage points



# 4

## The road ahead

## WHAT'S NEXT?

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More instrument attributes  
(commercial real estate,  
sustainability) for financial  
stability analysis and banking  
supervision



Granular data on loans to  
natural persons



Deriving aggregates from  
granular data

# Thank you!

