



EUROPEAN CENTRAL BANK

EUROSYSTEM

Update on workstream on the methodology for the calibration of holding limits

11th ERPB technical
session on digital euro



11 April 2024

Digital euro project

A large, white, sans-serif number '1' is centered on the left side of the slide. The background behind the number is a vibrant gradient transitioning from purple at the top to blue at the bottom, with a diagonal split line separating it from the white background on the right.

1

**What is this
workstream about**

Setting the background for the workstream

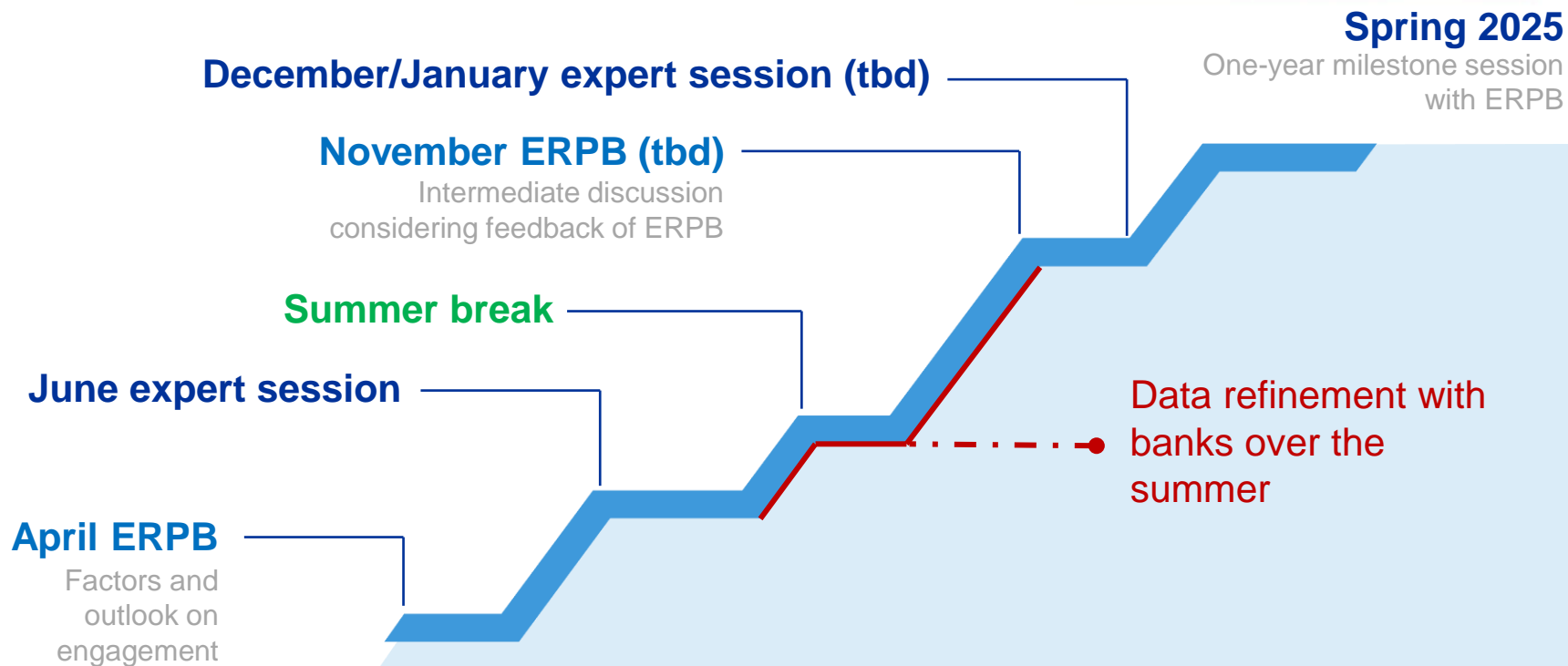
- ▶ Holding limits are a **key design feature** that will **be set close to potential issuance**
- ▶ This workstream is about developing a **methodological framework and models necessary to calibrate** the holding limit
- ▶ Key question for feedback after this ERPB meeting: **Do we consider everything we need to?**

How the workstream is set up

- ▶ **Multidisciplinary team:** Experts from relevant business areas of ECB and SSM with background in e.g., payments, monetary policy, financial stability, market operations and banking supervision
- ▶ **Eurosystem effort:** ECB team will leverage on expertise from National Central Banks and National Competent Authorities
- ▶ **Building on solid research:** Eurosystem staff has researched implications of CBDC extensively, which is groundwork for the workstream

Engaging with the market over the next year

One-year outlook



A large, white, sans-serif number '2' is centered on the left side of the slide. The background behind the number is a vibrant gradient that transitions from purple at the top to blue at the bottom, with a diagonal split between the two colors.

2

**Under which premises
does the calibration
take place**

Holding limits and design features of digital euro

Holding limits per user will contribute together with other design choices to make the digital euro primarily a means of payment rather than a store of value

- ▶ **Zero remuneration:** digital euro will not be remunerated, just like cash
- ▶ **“Reverse waterfall” functionality:** people can link digital euro to a payment account, such that they do not need to hold large amounts of digital euro to be sure they can always make payments
- ▶ **Zero holding limits for merchants:** merchants would not be able to hold digital euro, without constraining their ability to accept digital euro (“waterfall” functionality)

Draft legislation balances objectives for setting holding limits

Article 15.1 of the proposed digital euro Regulation lays down three objectives

- Enable natural and legal persons to access and use digital euro (“usability”)
- Define and implement monetary policy (“monetary policy and its implementation”)
- Contribute to the stability of the financial system (“financial stability and banking supervision”)

which relate to the Eurosystem’s investigation phase findings:

- **Preserve freedom of access** to a public good such as central bank money and **ensure a ‘best in class’ user experience** when paying with digital euro
- Maintain financial and financing conditions **consistent with the monetary policy stance**
- Preserve a healthy **equilibrium between bank deposits and central bank money** in circulation (i.e., safeguard financial stability)

3

Which relevant factors could the calibration consider?*

* Initial views subject to revision based on ERPB technical session feedback and expertise/views leveraged from NCBs/NCAs

Framework will need to consider key factors that influence calibration of holding limits

The definition of the methodology for the calibration requires a complex economic assessment involving expertise from multiple areas

- A. **Identify the key factors** that influence the calibration
- B. Establish a coherent framework, taking those factors into account
- C. Decide on the holding limit and its stability over time, while preserving the possibility of future revision if need be

At this stage we seek discussion and feedback on **A.:** the key questions to be answered, relevant models and data.

Further into the preparation phase, we will detail out and engage with stakeholders on **B.**

First building block: Usability and ecosystem

- Public good nature of the digital euro and proportionality principle: restrictions should be necessary, appropriate and the least intrusive to maintain financial stability and support the effectiveness of monetary policy.
- Yet, it is important deepen the understanding of the practical implications of usability resulting from different holding limits.

Key identified questions and factors of the building block:

Questions	Factors
Impact of speed of adoption on the calibration of holding limit	Adoption rate
User preferences in terms of pre-funding over reverse waterfall	Preference to pre-fund, usage of reverse waterfall
Impact of slower-than-expected reverse waterfall on users' preferences	Speed of reverse waterfall
Amount of pre-funding needed for digital euro payments (P2P, POS, e-commerce) if users follow a monthly top-up cycle	Ability to use pre-funding with a monthly cycle

Second building block: Monetary policy

- Look at range of effects the digital euro may have on the monetary policy stance, transmission and implementation.

Key identified questions and factors of the building block:

Questions	Factors
Range of effects on the economy for alternative limits, cash & digital euro demand levels and different central bank responses	<ul style="list-style-type: none">• Credit supply/bank lending• Bank deposits / funding conditions• Intermediation capacity (profitability and capital accumulation)
Range of effects on stance, implementation and central bank balance sheet for alternative limits, cash & digital euro demand levels and different central bank responses	<ul style="list-style-type: none">• Money market conditions• Available modalities for Eurosystem balance sheet adjustment• Collateral constraints
Potential impact of increased digitalisation on composition of monetary aggregates (allocation of funds across cash, digital euro and bank deposits)	Cash holdings dynamics

Third building block: Financial stability

- Look at the range of effects of the digital euro on banks' liquidity buffers and regulatory ratios (NSFR and LCR, incl. further metrics).

Key identified questions and factors of the building block:

Questions	Factors
Range of possible effects on bank deposits	Mapping of different limits and deposit outflows Outflow of deposits Inflow of deposits
Range of possible effects on funding	Funding composition Funding costs New income sources Interest income
Range of possible effects on liquidity	Liquidity buffers/ Compliance with regulatory ratios (NSFR, LCR) etc.
Range of distributional impact (of all outcomes)	Across individual banks Across countries Across business model

Third building block: SSM banking supervision

- Look at the range of effects of the digital euro on banks' business model sustainability, liquidity and funding management.

Key identified questions and factors of the building block:

Questions	Factors
<p>Range of impact on banks' business model sustainability, including on how this differs across individual banks and business models</p> <p>Range of impact of deposit shift to the cost of funding and thus the Net Interest Income</p>	<p>Business model sustainability</p>
<p>Range of impact on liquidity buffers and funding mix (including during stressed conditions), including on how this differs across individual banks and business models and countries.</p> <p>Possibility of clustering banks into "stylized funding models" to have a holistic view across the SSM.</p> <p>Identification of the most important KPIs/indicators to consider.</p> <p>Identification of the level of deposit outflows at which the liquidity position of a SI would be impaired.</p>	<p>Liquidity buffers (LCR and further metrics)</p>
	<p>Collateral availability (incl. counterbalancing capacity)</p>
	<p>Funding mix (NSFR and further metrics)</p>
	<p>Interest rate risk in the banking book (IRRBB)</p>

A large, white, sans-serif number '4' is centered on the left side of the slide. The background behind the number is a vibrant gradient transitioning from purple at the top to blue at the bottom, with a diagonal split between the two colors.

4

**Feedback by the
ERPБ**

For feedback by the ERPB by 24 May 2024

We specifically invite **reflections on the key identified questions and factors outlined for the various building block (slides 11 to 14)**, including reasoning for any adjustments, additions, or deletions.

You may also provide suggestions on suitable methodologies or data sources.

Invitation for dedicated expert sessions

ERPB **bank** and **consumer associations** will be invited to nominate up to five topical experts (e.g., treasury experts) from their constituents to join an expert session with ECB workstream staff following the deadline of the written procedure. Details will follow.

This composition reflects the objectives “useability” (*consumers*) and “financial stability and banking supervision” (*banks*) from Article 15.1 of the proposed regulation



EUROPEAN CENTRAL BANK

EUROSYSTEM

Thank you

Additional supporting materials:

- Updated digital euro [FAQ](#)
- [Report](#): A stocktake on the digital euro
- [ECB opinion](#) on the EU Commission's digital euro legislative proposal
- Digital euro [one-pager](#)
- Digital euro [booklet](#)
- Digital euro [LinkedIn page](#)