

Discussion of

Survey insights on digital euro affinity and their implications for outflow of deposits

by P. Gertler, A. Cupak, D. Hajdiak, J. Klacso and S. Rychtarik

Elia Moracci*
Bank of Italy

Digital euro and its holding limit: how to calibrate it? - ECB

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* The views expressed here do not necessarily represent those of the Bank of Italy.

My discussion

- Very interesting paper!
 - Nice stats on demand for a D€ in Slovakia
 - A creative approach to computing potential outflows
- **Summary** of the paper
- **My comments**
 1. Calculation of potential deposit outflows
 2. Some words of caution on estimated outflows
- **Implications for digital euro holding limits**

Paper summary

1. Digital euro awareness, potential use and design preferences in SK.

- **Awareness** correlates with political preferences, education, age, internet usage and financial assets ownership
- **Potential use** also impacted by trust in EU institutions (positively) and affinity with cash (negatively)
- The most important **design attributes** to consumers are privacy and anonymity

2. Potential deposit outflows.

- **Survey data:** Slovakian households plan to spend about 27% of monthly net income (35% of avg. overnight deposit) as digital euro
- **Quantitative estimates** based on deposit micro data and survey questions: potential outflows in SK of about 2-6% of existing deposits

My comments

Calculation of potential deposit outflows

$$\frac{OutflowsDep}{TotalDep} = \underbrace{\left(\frac{OvnDep}{TotalDep} \cdot \frac{EligibleDep}{OvnDep} \right)}_{\text{Share deposits "at risk"}}, \cdot \underbrace{\left(\underbrace{\frac{WouldUseD\epsilon}{Extensive\ margin}}_{\text{Extensive margin}} \cdot \frac{MonthlyExpD\epsilon}{Intensive\ margin} \right)}_{\text{Exp. outflow per € of deposits}}$$

- I would try to be even clearer on the exact steps involved in the computation.
- Assumptions:
 - Adoption rate (ext. margin) ← Not explicitly reject D€
 - %Outflow (int. margin) ← Intended D€ exp. as a fraction of income [more on this later]

My comments

Some words of caution on estimated outflows - 1/2

F11c. In such a case, how much euros would you pay monthly from your digital euro account in this way?

- Assume expenditure = income for simplicity.
 - Before digital euro: $\alpha_0\%$ is paid for in cash; $(100 - \alpha_0)\%$ using deposits
 - After digital euro: $\alpha_1\%$ is paid for in cash; $\gamma\%$ using D€; $(100 - \alpha_1 - \gamma)\%$ using deposits
- The question above asks agents about $\gamma\%$
- Authors implicitly assume that $\alpha_0 = \alpha_1$
In reality, D€ is likely to displace some of the expenditure done in cash ($\alpha_1 < \alpha_0$).
This would reduce expected outflows [relevant for cash-intensive countries like SK]

My comments

Some words of caution on estimated outflows - 2/2

- The relevant object to estimate outflows are desired D€ **holdings** (\neq expenditure)
 - HHs could use their D€ for a lot of purchases, but still have low average holdings (avg. deposits would be high)
 - Example: transfer from dep. to D€ account right before payment (even easier with **reverse waterfall** functionality! \propto velocity)
- With the data at hand, the authors do the best they can.
- Would be nice to map average D€ expenditure to average D€ holdings making assumptions on the design of funding/reverse waterfall functionalities.

*“Digital euro funding will be possible via cash (at an ATM or in-branch) or via a private money account. Intermediaries may offer **both manual and automated funding**. Individual users would also have the option of **setting a default balance** for their digital euro holdings, which would be **funded automatically** after any outflow has occurred. The default balance could not be higher than the holding limit set by the Eurosystem.”*

Implications for digital euro holding limits

| Question | Applicability | Details/suggestions |
|--|---------------|---|
| Effect of holding limit | ✓ | Change in “deposits at risk” |
| Impact of speed of adoption | ✗ | Requires a different setup |
| Pre-funding vs reverse waterfall | ✓ | Show sensitivity of results to different preferences? |
| Impact of slow reverse waterfall | ✓ | Show sensitivity of results to different RW takeup? |
| Pre-funding needed with monthly top-up | ? | Probably hard to integrate |

Summing up

- Interesting and clearly relevant question + creative approach to measurement.
- Useful survey evidence on awareness, potential adoption and preferred design attributes in Slovakia.
- Calculation of expected deposit outflows, with some caveats to bear in mind.