

Survey I questionnaire

Introduction of central bank digital currencies (CBDCs), and the implications of negative interest rates. This survey examines your opinion on central bank digital currencies (CBDCs) like the digital euro. Also, it is about your tolerance to negative interest rates and whether you would start converting your bank deposits rather into cash or a new secure CBDC to avoid a negative yield on your bank account. Your participation, which will take less than 10 minutes, is greatly appreciated. It will significantly contribute to my PhD research. My study focuses on the impact of CBDCs on payments and value storage, especially during periods of negative interest rates.

Please note that the underlying currency for this survey is the euro (EUR). If you are participating from Bulgaria, Czech Republic, Denmark, Hungary, Poland, Romania, or Sweden, kindly convert your currency values into euros. Thank you.

Section 1

Removal of cash and introduction of a central bank digital currency (CBDC)

It is important to point out a few things to avoid misunderstandings about CBDCs:

More than 90% of the central banks are presently evaluating CBDCs. CBDCs have the potential to significantly alter our spending habits and methods of value storage. Currently, cash transactions are cost-free and anonymous. However, possessing large sums of cash comes with inconvenience, increased effort in exchanging, and security risks. A proposed CBDC could enhance the safety of daily payments and value storage, as it could be securely maintained in a digital wallet and easily transferred. Nonetheless, this could result in transparency of expenditures to regulatory authorities. Note: please keep in mind for all answers:

1. A CBDC is central bank money and therefore—just like bank notes—its value is protected (unlike cryptocurrencies or excessive deposits at your bank).
2. A CBDC could be easier to handle than cash, just like credit or debit cards, Apple or Google Pay, or PayPal, etc.
3. Using a CBDC could be less anonymous than using cash. Though the EU plans to respect privacy, all transactions might be recorded (just like all other electronic payments nowadays).

1.1. How familiar are you with the discussion about the introduction of a CBDC such as the digital euro?

(Multiple choice:)

- ☐ Not at all familiar
- ☐ Somewhat familiar
- ☐ Familiar
- ☐ Very familiar
- ☐ Extremely familiar

1.2. Imagine the central bank introduces a CBDC in addition to cash. A CBDC could be more secure and easier to handle than cash. However, a CBDC is potentially

less anonymous because all payments could be recorded. Would you use this CBDC instead of using current forms of payment (e.g. cash, debit or credit cards) for your daily payments?

(Multiple choice:)

- ☐ I would strictly avoid using the CBDC.
- ☐ I would probably not use the CBDC where I don't have to.
- ☐ I don't care whether I use other forms of payment or a CBDC.
- ☐ I tend to use a CBDC over cash.
- ☐ I would use the CBDC wherever I can.

1.3. If the central bank introduces a CBDC with a limited free-of-charge amount, and charges fees on any excess amount, what do you think would be a fair and appropriate limit for this free CBDC amount?

(Multiple choice:)

- ☐ EUR 1,000
- ☐ EUR 2,000
- ☐ EUR 3,000
- ☐ EUR 5,000
- ☐ EUR 10,000
- ☐ EUR 20,000
- ☐ EUR 50,000
- ☐ EUR 100,000
- ☐ Other: _____

1.4. If the central bank limits the free-of-charge usage of a CBDC to a certain amount (e.g., EUR 10,000), would you use this amount for daily expenses and keep a balance on your CBDC account if the CBDC payment was easy, widely accepted, and safe?

(Multiple choice:)

- ☐ No, I would not use a CBDC. I would use other payment options.
- ☐ Yes, I would keep a balance on my CBDC account of around EUR 500.
- ☐ Yes, I would keep a balance on my CBDC account of around EUR 1,000.
- ☐ Yes, I would keep a balance on my CBDC account of around EUR 1,500.
- ☐ Yes, I would keep a balance on my CBDC account of around EUR 3,000.

- Yes, I would keep a balance on my CBDC account of around EUR 5,000
- Yes, I would keep a balance on my CBDC account of around EUR 7,500
- Yes, I would keep a balance on my CBDC account of around EUR 10,000

1.5. In an extreme scenario, a central bank could replace bank notes with a CBDC. Would you support the removal of cash in general, and therefore completely switch to digital payment options (e.g., debit and credit cards, CBDCs, cryptocurrencies, Google or Apple Pay, etc.)?

(Multiple choice:)

- I am strictly against the removal of cash.
- I tend to be against the removal of cash.
- I do not care if cash was removed and would live with whatever is the standard.
- I somewhat support the removal of cash.
- I strongly support the removal of cash.
- I do not know.
- Other: _____

1.6. What concerns do you have for when CBDCs are implemented?

(Multiple choice grid:)

	not at all	slightly	moderately	very	extremely
Security (theft, fraud, hacking, etc.)	O	O	O	O	O
Privacy (transparency to the government)	O	O	O	O	O
Control of the government over your finances	O	O	O	O	O
Stability of the financial system	O	O	O	O	O
System black outs and loss of data	O	O	O	O	O
Gradual removal of cash	O	O	O	O	O
Applied cost on your CBDC account	O	O	O	O	O

Thank you for answering the first part. The next part is about your tolerance to negative interest rates. Please remember: if negative interest rates are applied to your deposits at your bank, you are losing money by keeping it there.

Section 2

Impact from negative interest rates on using your bank account or a CBDC

The central bank may impose negative interest rates, making holding cash in a bank account costly. For example: if faced with a -5% interest rate, imagine you could avoid losing EUR 500 per year on a €

10,000 deposit by converting it to cash or a CBDC. Obviously, a -1% interest rate on EUR 3,000 would result in costs of EUR 30 p.a.

Would you convert your deposits under these circumstances, considering the advantages and disadvantages of cash and CBDCs? If so, would you choose the same or different rates for conversion due to their various benefits and drawbacks?

This section of the survey examines your reactions to negative interest rates and potential responses like converting deposits to cash, CBDCs, increasing consumption, or exploring other investment options.

2.1. Would you consider taking measures to avoid negative interest rates? If the answer is yes, which of the following measures would you take (select all that apply)?

(Checkboxes:)

- ☐ Convert deposits to cash.
- ☐ Convert deposits to CBDCs.
- ☐ Invest in other assets (stocks, bonds, real estate).
- ☐ Move funds to a different bank with a lower negative interest rate if available.
- ☐ Spend the money to avoid holding deposits.
- ☐ No, I would not take any measures.

2.2.a. Have you already exchanged deposits into cash in the past to avoid additional costs from negative interest rates?

(Multiple choice:)

- ☐ Yes
- ☐ No

2.2.b. If you answered "Yes" in the previous question, please provide a short explanation. How much (in absolute numbers or in % of your liquidity) did you exchange? What level of cost did you try to avoid? For how long did you hold cash? Did you put it back on your account or use it for consumption?
(Text box:)

2.3. Imagine the central bank sets a limit on the amount of CBDCs you can hold free-of-charge, say EUR 5,000, EUR 10,000, or EUR 20,000. Any amount beyond this would incur charges similar to negative interest rates on your bank account. If you could save between EUR 200 or EUR 400 (depending on the negative interest rate) per year by converting up to EUR 10,000 from your bank account to CBDCs, would you choose to convert up to the maximum free-of-charge amount?

(Multiple choice:)

- ☐ Yes

- No

2.4. Imagine that negative interest rates were imposed by the central bank and applied to your bank account. You may choose to convert your account balance to cash and/or CBDCs to avoid losses.

Please keep in mind:

- Converting cash can be laborious and costly due to exchange, transport, secure storage, and possible insurance needs.

- CBDCs are secure, free, and easier to handle than cash, but transactions may be recorded (just like all digital payments nowadays).

At what level of negative interest would you start converting your balance into cash or CBDCs? Please choose a threshold for cash and CBDCs.

(Checkbox grid:)

	Cash	CBDCs
0% to -0.5%	<input type="checkbox"/>	<input type="checkbox"/>
-0.51% to -1%	<input type="checkbox"/>	<input type="checkbox"/>
-1.01% to -1.5%	<input type="checkbox"/>	<input type="checkbox"/>
-1.51% to -2%	<input type="checkbox"/>	<input type="checkbox"/>
-2.01% to -2.5%	<input type="checkbox"/>	<input type="checkbox"/>
-2.51% to -3%	<input type="checkbox"/>	<input type="checkbox"/>
More than -3%	<input type="checkbox"/>	<input type="checkbox"/>
I would not convert my deposits.	<input type="checkbox"/>	<input type="checkbox"/>

2.5. Reflecting on the potential influence of negative interest rates, what portion of your bank deposits could be affected? Note: This question is not about your total wealth, but about the degree to which your deposits might be impacted by negative interest rates on average. A larger affected amount indicates a higher probability of taking steps to minimize the impact of negative interest rates on your deposits.

(Multiple choice:)

- EUR 0–999
- EUR 1,000–1,999
- EUR 2,000–2,999
- EUR 3,000–4,999

- EUR 5,000–9,999
- EUR 10,000–14,999
- EUR 15,000–19,999
- EUR 20,000–29,999
- EUR 30,000–49,999
- EUR 50,000–74,999
- EUR 75,000–99,000
- EUR 100,000–150,000
- EUR 150,000–199,000
- more than EUR 200,000

2.6. The lower the negative interests are below zero, the higher the impact is on your deposits. How high do you expect the impact on your deposits?

(Linear scale:)

	1	2	3	4	5	6	7	8	9	10	
Low. I usually keep only little free liquidity on my account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	High. I always keep high liquidity in my accounts which could be affected.

2.7. In case of a banking crisis, your money in your bank account would potentially be at risk. In general, in such a situation, central bank money, like cash and CBDCs, is considered safe. If you have the option to convert your deposits into a combination of cash and CBDCs, which would you choose? Please consider the pros and cons of holding larger amounts of cash vs. CBDCs.

(Linear scale:)

	1	2	3	4	5	6	7	8	9	10	
All in cash	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	All in CBDCs

2.8. What are the reasons for you accepting costs (negative interest rates or account fees from the bank) on your account? (Multiple choices possible)

(Checkboxes:)

- ☐ Convenience
- ☐ Security
- ☐ It is just the way I like to handle my cash.
- ☐ I want to be flexible in case I need to transfer money or pay my bills.

- ☐ I accept the costs because they depend on the interest rate set by the central bank and not my local bank.
- ☐ Other: _____

Thank you for answering the second (out of three) part. Keep going!

Section 3

Personal questions (we do not collect any personal information):

It would really help us if you would tell us a little bit about yourself! It would especially help to put your answers in context in relation to the current development in your country regarding CBDCs.

3.1. Please select your gender.

(Multiple choice:)

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ Prefer not to say

3.2. What is your age? (please enter a number)

(Text box:)

3.3. Which country is your primary residence?

(Drop down choice:)

Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, USA

3.4. Please select your level of education:

(Multiple choice:)

- ☐ High school or lower
- ☐ Some college or vocational training
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctorate or higher
- ☐ Prefer not to say

3.5. What's your current employment status?

(Multiple choice:)

- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Self-employed
- ☐ Unemployed
- ☐ Student
- ☐ Retired
- ☐ Prefer not to say

3.6. What is your approximate household income on an annual basis?

(Multiple choice:)

- ☐ EUR 0–4,999
- ☐ EUR 5,000–9,999
- ☐ EUR 10,000–14,999
- ☐ EUR 15,000–19,999
- ☐ EUR 20,000–24,999
- ☐ EUR 25,000–29,999
- ☐ EUR 30,000–39,999
- ☐ EUR 40,000–49,999
- ☐ EUR 50,000–74,999
- ☐ EUR 75,000–99,999
- ☐ EUR 100,000–199,999
- ☐ EUR 200,000 and more
- ☐ I prefer not to say

3.7. Any additional remarks you have regarding this topic and the survey?

(Text box:)

Thank you for participating in this survey! You have done a great job supporting science!

If you participated via CLICKWORKER, please don't forget to hit the "submit" button. Your CLICKWORKER code will be shown on the following page!

If you like to receive the results of this survey, please leave your email here:

(Text box:)

Survey II questionnaire

The Digital Euro as an Alternative to Cash, and the Implications of Negative Interest Rates

This survey examines your opinions on the **digital euro** as an alternative to cash. Additionally, it explores your **tolerance for negative interest rates** and whether you would consider converting your bank deposits into cash or the new digital euro (when available) to **avoid negative interest rates on your bank account**.

Your participation, which will take around **5 minutes**, will significantly contribute to my PhD research on the digital euro.

Please read the questions carefully, as accurate responses are crucial for the validity of my research results.

Note for CLICKWORKER participants: do not forget to hit the "submit" button at the end of the survey. Your CLICKWORKER code will be displayed on the following page.

Thank you for your participation!

Mick

Section 1:

Before starting the survey, please read this **brief introduction** to the digital euro.

What is the digital euro?

The digital euro is a **digital form of currency** which might be issued by the **European Central Bank (ECB)** somewhen in the future. It is **not a cryptocurrency like Bitcoin**, but rather a **digital version of the euro**, with the same value as physical cash. So, its value is safe just like cash, even in times of financial turmoil.

Key Features:

Accessibility: The digital euro is intended to be accessible to all, ensuring that everyone has access to a safe form of money in a digitalizing world.

Costs: The current design includes cost-free payments for day-to-day expenses. Anyhow, since intermediaries such as banks might be involved, some services (storage or transfer of larger euro amounts) might come at a cost.

Security: Backed by the ECB, it offers a high level of security and is a direct claim on the ECB, similar to cash, but it cannot be ruled out that theft, hacking, etc. is possible, just like your cash might be stolen.

Privacy: The digital euro is designed with privacy considerations, but unlike cash, it may involve some level of digital record-keeping, especially for larger amounts.

Ease of Use: It can be used for daily transactions, online purchases, and peer-to-peer payments. Payments will be as easy as with your debit or credit card.

1.1. How important are the following **qualities** to you when considering a form of payment or storage of value (such as cash, bank deposits or digital currencies like the digital euro). Please rate each quality on a scale from 1 to 10.

Costs for exchanging, transporting, holding, securing etc. for payments or storage of value
Not at all important to Extremely important (on a scale from 1 to 10)

Security from theft, hacking, financial turmoil etc.
Not at all important to Extremely important (on a scale from 1 to 10)

Privacy of payments and holdings of value from banks or authorities.
Not at all important to Extremely important (on a scale from 1 to 10)

Overall Preferences: For instance, consider aspects like **convenience** to handle and your **familiarity** with payment methods. Please rate the importance on a scale.*
Not at all important to Extremely important (on a scale from 1 to 10)

1.2. How would you **rate** the **qualities** of **cash** or the **digital euro** below? Please **choose a score** for each quality.

How do you evaluate the costs associated with using cash? Please consider factors such as the expenses involved in exchanging deposits, transporting money, and storing larger amounts, which might include costs for a vault, insurance, etc.
Very little costs to Extremely costly (on a scale from 1 to 10)

Costs for the digital euro: How do you evaluate the costs for the digital euro? Please remember that setting up a wallet and becoming familiar with the functionality might come at a cost. Also, transferring and storing large amounts might come at a cost. Day-to-day payments are free of charge.
Very little costs to Extremely costly (on a scale from 1 to 10)

How do you rate the **security of cash** in terms of payments and as a store of value? Please consider that storing cash, especially in larger amounts, may expose you to the risk of theft.
Extremely risky to Extremely safe (on a scale from 1 to 10)

How do you rate the **security of the digital euro** for payments and as a store of value? Please keep in mind that, although its design is intended to be secure, there may still be risks such as theft or hacking.
Extremely risky to Extremely safe (on a scale from 1 to 10)

How do you rate the **privacy** associated with **using cash**? Keep in mind that cash payments are completely anonymous. However, converting large deposits into cash (and vice versa) might be recorded by your bank.
Not private at all to Extremely private (on a scale from 1 to 10)

How do you assess the **privacy level of the digital euro**? The design aims to ensure privacy for smaller payments while maintaining a record of larger payments (specific amounts yet to be defined). However, it is important to note that, in general, all digital payments might be fully transparent to authorities.

Not private at all to Extremely private (on a scale from 1 to 10)

Based on your knowledge and the frequency of your usage in daily life, how would you rate your **overall preference for cash**?

I do not like cash at all to I have a high preference for cash (on a scale from 1 to 10)

Based on your current knowledge about the **digital euro** (even if limited), what is your **overall preference** for it? Please rate your likelihood of using the digital euro.

I don't like the digital euro at all to I have a high preference for the digital euro
(on a scale from 1 to 10)

Thank you for answering the first part. The next part is about your tolerance to negative interest rates.

Section 2

Response to Negative Interest Rates Imposed by the European Central Bank

The **ECB may introduce negative interest rates** in difficult economic times. Therefore, instead of earning interest on your bank deposits, you **would be charged a fee for keeping your money in the bank**. This change could make holding cash in your bank account costly. You have the **option to avoid these costs by converting your deposits into cash or the digital euro**.

Would you choose to convert your deposits under these circumstances, or would you accept the costs and keep your money in your deposit account? If you would convert, would you prefer cash or the digital euro? Please consider the benefits and disadvantages of both options in your decision.

2.1 Imagine your bank introduces a negative interest rate on your deposits, which means you would have to pay a fee to keep your money in the bank. At what level of negative interest rate would you consider moving your money out of the bank into either physical cash or the digital euro (central bank digital currency, CBDC)? Select the rate at which you would make this change.

Please consider the following:

Converting large deposits into cash may be laborious and costly due to the requirements for exchange, transport, secure storage, and potential insurance needs. The digital euro is secure, free, and easier to handle than cash, but it may be subject to monitoring by authorities.

Example for Clarity: Keeping EUR 10,000 in your deposit account would cost you EUR 100 per year at a -1% interest rate and EUR 500 per year at -5%. Similarly, keeping EUR 100,000 would cost you EUR 1,000 at -1% and EUR 5,000 at -5% (and so forth).

Please choose one interest rate for converting into cash and another for converting into the digital euro, treating each decision independently (you can scroll to the right).

Convert to cash, Convert to digital euro

At these interest rates: -0.5 %, -1.0 %, -1.5 %, -2.0 %, -2.5%, -3.0%, -3.5%, -4.0%, -4.5%, -5.0%, more than -5%, I would not convert at all.

2.2 If you would exchange deposits into either cash or CBDCs when there are negative interest rates applied to your account. **What portion would you convert into cash and what portion into CBDCs?**
All into cash to All into CBDCs (increments from 1 to 10)

2.3. Also assuming a period of negative interest rates, what do you anticipate the portion for physical cash and the digital euro to be for you **in 10 years**, assuming the **CBDC is fully established** by then?
All into cash to All into the CBDC (increments from 1 to 10)

Thank you for answering the second part. Let's move to the last part!

Section 3:

Personal questions (we do not collect any personal information):

It would really help us if you would tell us a little bit about yourself! It would especially help to put your answers in context in relation to the current development in your country regarding CBDCs.

3.1. Please select your gender.

Female

Male

Prefer not to say

3.2. What is your age?

(please enter a number)

Your answer

3.3. Which country is your primary residence?

Choose from EU countries

3.4. Any additional remarks you have regarding this topic and the survey?

Your answer

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If you like to receive the results of this survey, please leave your email here:

Your answer: