

## CBDCs: The Control Paradox

Digital cash promises financial inclusion for all — but the same ledger that frees you can also watch you

Digital Finance

# What If the Government Could See Every Coffee You Buy?

## The Control Paradox

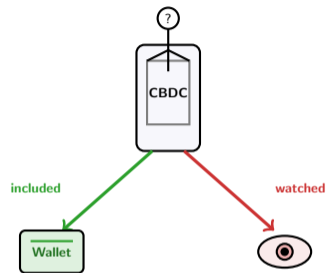
1.7 billion adults have no bank account. They cannot save, borrow, or receive wages digitally. CBDCs could fix this overnight – give everyone a digital wallet backed by the central bank. No bank account needed. No credit check. Financial inclusion at scale.

## What CBDCs promise:

- Universal access – anyone with a phone gets central bank money
- Instant settlement – no more 2-day clearing
- Programmable money – targeted stimulus, conditional spending
- Cross-border efficiency – bypass correspondent banking

## What CBDCs enable:

- Complete transaction surveillance – every purchase, every transfer
- Programmable restrictions – money that expires, spending limits by category
- Negative interest rates enforced at the wallet level – no escape to cash
- Account freezing without judicial process – a keystroke, not a court order



*Same technology. Same ledger.  
Different policies.*

CBDCs promise to bank the unbanked – but the same ledger that includes you can also control you.

# How Would You Feel If Your Money Had an Expiration Date?

## Reflection Prompt

Imagine receiving your tax refund as digital central bank money. But there is a catch: the money expires in 90 days. If you do not spend it, it vanishes. The government designed it this way to stimulate the economy during a recession. You wanted to save it for rent next quarter – but the code says no.

This is not science fiction. China's e-CNY has already tested expiration dates on digital yuan coupons distributed during COVID stimulus.

### **Programmable money means:**

- Your salary could be auto-taxed before you receive it
- Stimulus payments could be restricted to “approved” merchants
- Savings could face negative interest rates with no way to withdraw cash
- Donations to certain organizations could be flagged or blocked

The technology is neutral. A CBDC designed by a democracy with strong privacy laws looks very different from one designed by an authoritarian state with social credit scoring.

The question is not “can CBDCs do this?” – they can. The question is: who decides the rules, and can those rules be changed?

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**Programmable money is a policy tool, not a technology feature. The same capability enables stimulus AND surveillance.**

# What Makes a CBDC Different from Everything Else?

Dimension	Cash	Bank Deposit	Crypto	CBDC
Issuer	Central bank	Commercial bank	Decentralized	Central bank
Form	Physical	Digital	Digital	Digital
Privacy	Anonymous	Tracked	Pseudonymous	Configurable
Programmable	No	Limited	Yes (smart contracts)	Yes (policy)
Interest	No	Yes	Protocol-dependent	Configurable
Offline use	Yes	No	No	Possible
Legal tender	Yes	No (promise)	No	Yes
Default risk	None	Bank failure	Protocol failure	None (sovereign)

## The pattern to notice

A CBDC combines the safety of cash (central bank liability, no default risk) with the programmability of crypto (conditional logic, automated rules). But it adds something neither has: state-level control over individual transactions.

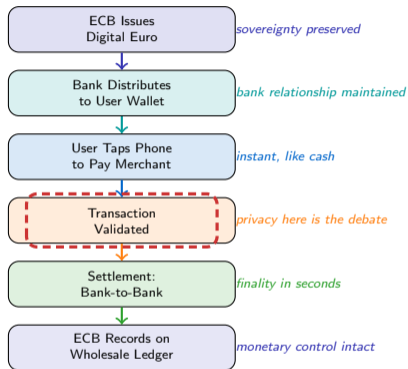
**Key insight:** A CBDC is NOT a stablecoin (private), NOT a cryptocurrency (decentralized), and NOT a bank deposit (commercial liability). It is a new category: sovereign digital money.

The “configurable” entries are the battleground. Every CBDC design makes a choice on privacy, programmability, and interest – and each choice has winners and losers.

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**A CBDC is sovereign digital money – combining cash's safety with crypto's programmability and the state's control.**

# How Does a Digital Euro Transaction Actually Work?

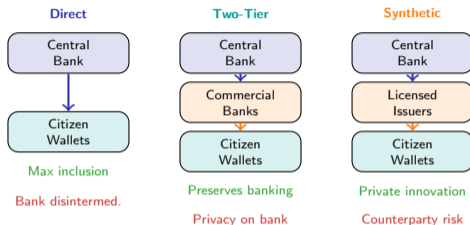


## Six steps, one key decision point

- **Two-tier model:** The ECB does NOT give citizens direct accounts. Commercial banks remain intermediaries. This preserves the banking system.
- **Step 4 is the privacy debate:** Does the ECB see transaction details? Does the bank? Is there a threshold below which transactions are anonymous (like cash)?
- **The digital euro proposal:** Transactions below a threshold (possibly EUR 150–300) would be “cash-like” (high privacy). Above threshold: standard AML/KYC applies.
- **Key insight:** The two-tier model is a political compromise. Direct CBDC would disintermediate banks (systemic risk). Fully private CBDC would enable money laundering. The design lives in the tension.

The two-tier model is a political compromise – preserving banks while delivering digital cash. The privacy threshold is where inclusion meets surveillance.

# Why Does Every CBDC Design Sacrifice Something?



*No free lunch: each design trades off inclusion, privacy, and stability.*

## Three architectures, three trade-offs

- **Direct CBDC:** Maximum inclusion (no bank needed), but the central bank becomes retail service provider (capacity risk), and banks lose deposits (systemic risk). China's e-CNY is closest but uses "designated operators."
- **Two-tier CBDC:** Preserves bank intermediation (EU digital euro model). But privacy depends on bank policies, and banks can still deny service. The "unbanked" problem may persist.
- **Synthetic CBDC:** Private companies issue CBDC-backed stablecoins (like regulated Tether). Innovates fast but reintroduces counterparty risk – the exact problem CBDCs were supposed to solve.

**The design question:** Who do you trust more with your financial data – a central bank, a commercial bank, or a tech company?

Direct, two-tier, or synthetic – every CBDC architecture trades off between inclusion, privacy, financial stability, and innovation speed.

# What Goes Wrong When Central Banks Become Retail Bankers?

## When the Safety Net Becomes the Cage

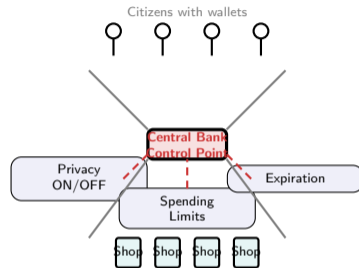
**Bank runs amplified:** In a crisis, depositors can instantly move money from commercial bank deposits to CBDC (digital bank run). No queuing at ATMs – just one tap. Central banks may need holding limits (e.g., EUR 3,000 max in digital euro).

## Monetary policy on steroids:

- Negative interest rates: impossible to enforce when people can withdraw cash. With CBDC and no cash, negative rates become inescapable
- Helicopter money: direct transfers to citizens bypassing banks entirely
- Programmable spending: money that can only be spent on food, not alcohol

**Geopolitical weapon:** A dominant CBDC (e-CNY, digital dollar) could bypass SWIFT sanctions. Countries may adopt foreign CBDCs, losing monetary sovereignty.

**The fundamental risk:** CBDCs shift power from the market to the state. Whether that is good or bad depends entirely on the state.



*One chokepoint rules them all.*

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CBDCs create a single control point over the money supply. In a democracy, that is a policy tool. In an autocracy, it is a weapon.

# Which Countries Are Closest to a Digital Currency – and Why?

## CBDC Development Status by Country (2025)



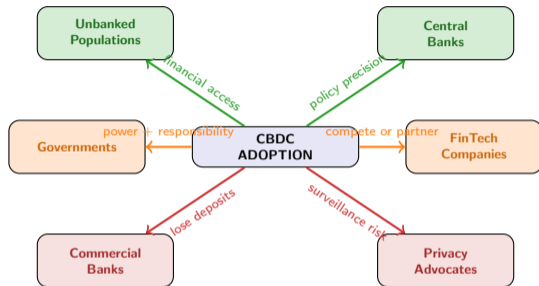
130+ countries (98% of global GDP) exploring CBDCs | Illustrative based on Atlantic Council CBDC Tracker

### What the map reveals

- **Launched countries share a pattern:** Small economies, high mobile penetration, large unbanked populations (Bahamas, Jamaica, Nigeria). CBDCs solve a real inclusion problem there.
- **Pilot countries are strategic:** China (geopolitical positioning, capital controls), India (financial inclusion at scale), Russia (sanctions avoidance), Saudi Arabia (oil settlement alternatives).
- **Development phase is cautious:** EU (privacy legislation), UK (wholesale focus), Brazil (Pix success complicates retail CBDC case).
- **Research phase is skeptical:** USA (political resistance), Switzerland (SNB: "no pressing need"), Japan (high cash usage culture).
- **The pattern:** Countries with the most to GAIN (inclusion, control) move fastest. Countries with the most to LOSE (privacy, bank disruption) move slowest. Technology readiness is not the bottleneck – political will is.

Countries move at different speeds not because of technology readiness but because of political will. Inclusion-motivated countries lead; privacy-concerned countries lag.

# Who Gains Power and Who Loses It in a CBDC World?



## Winners

- + **Unbanked populations:** Direct access to central bank money without needing a commercial bank account. Particularly impactful for migrant remittances (current cost: 6–8% via Western Union; CBDC: near zero).
- + **Central banks:** Unprecedented monetary policy precision. Can target stimulus by demographic, region, or spending category.

## Losers

- **Commercial banks:** If citizens hold CBDC directly, banks lose cheap deposits – their primary funding source. Holding limits help, but the structural threat remains.
- **Privacy advocates:** Even with thresholds, the infrastructure for total surveillance exists. A future government could change the rules.

## Mixed

- ~ **Governments:** Gain fiscal tools but bear responsibility for cybersecurity of national money.
- ~ **FinTech:** Could build on CBDC rails or be squeezed out by central bank wallets.

CBDCs redistribute power from commercial banks to central banks. The unbanked gain access – but everyone gains a surveillance infrastructure.

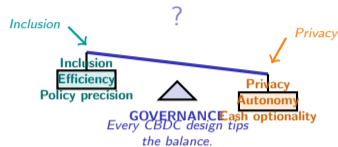
# The Privacy-Control Spectrum – Where Should Your Country Land?

## The CBDC Evaluation Framework

Before forming an opinion on any CBDC proposal, ask:

- 1 Who sees your transactions?**  
Central bank only (wholesale)? Commercial bank (two-tier)? Nobody below threshold (cash-like privacy)? Everyone (full transparency)?
- 2 What can the money be programmed to do?**  
Is it restricted by time (expiration), by category (food only), by amount (holding limits)? Who sets these rules – legislation, central bank policy, or executive order?
- 3 What is the opt-out?**  
Can citizens still use cash? Is there a constitutional right to anonymous transactions? What happens to the unbanked who lack smartphones?

**The control paradox:** The same CBDC that liberates the unbanked can oppress the dissident. The technology is identical – only the governance framework differs.



The right question is not “Should we have a CBDC?” – it is “Who controls the rules, and can they change without consent?”

## Mini-Challenge (15 minutes)

The Swiss National Bank has asked you to design a retail CBDC for Switzerland. Swiss citizens value privacy highly (banking secrecy tradition), the payment infrastructure is already efficient (TWINT, SIC), and the unbanked population is negligible. The SNB currently says there is “no pressing need.”

**Your deliverable:** Apply the three evaluation questions to design a Swiss digital franc:

- 1 **Privacy model:** Given Switzerland's privacy tradition, what threshold for anonymous transactions? Zero (fully transparent)? CHF 200? CHF 1,000? Unlimited (fully anonymous)?
  - What are the AML trade-offs at each level?
  - How does this compare to current cash usage?
- 2 **Architecture:** Direct (SNB runs wallets), two-tier (banks distribute), or synthetic (private issuers)?
  - The SNB says no pressing need – does a two-tier model justify itself?
  - What happens to PostFinance and cantonal banks?
- 3 **Programmability:** Should the digital franc support programmable features (expiration, spending categories)?
  - Switzerland's direct democracy: should citizens vote on programmability rules?
  - What if the EU digital euro has programmability and Switzerland does not?

**Discuss with your neighbor:** Would you support a Swiss digital franc referendum?

The SNB says no pressing need – but if the digital euro launches next door, does Switzerland have a choice?