

# Should you offer a CBDC?

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The screenshot displays a dark-themed digital wallet interface. On the left is a navigation sidebar with options: Dashboard (selected), Purchase, Redeem, Send, Request, Convert, and Settings. The main content area is titled 'Dashboard' and features two account balance cards. The first card is for 'United States Dollar X' with a balance of '\$ 200.20 USDx' and a last transaction of 'Bought +\$100.00 USDx' on 'May 20'. The second card is for 'Euro Dollar X' with a balance of '€ 151.35 EURx' and a last transaction of 'Received +€19.00 EURx' on 'Nov 06'. On the right, a 'Recent Transactions' list shows six entries: 'Bought USDx' (+\$299 USDx), 'Received AUSx' (+€50 EURx), 'Sent USDx' (+\$19 USDx), 'Sent USDx' (+\$25 USDx), 'Sold USDx' (+\$100 USDx), and 'Sold USDx' (+\$100 USDx). A 'Cancel Purchase' button is visible in the top right corner. At the bottom left of the dashboard, a user profile for 'Steve Kirsch @stevekirsch5000' is shown.

Dashboard

Account Balances

United States Dollar X  
\$ 200.20 USDx  
Last Transaction  
Bought +\$100.00 USDx May 20

Euro Dollar X  
€ 151.35 EURx  
Last Transaction  
Received +€19.00 EURx Nov 06

Recent Transactions

- Bought USDx + \$299 USDx 08 Nov
- Received AUSx + €50 EURx 06 Nov
- Sent USDx + \$19 USDx 05 Nov
- Sent USDx + \$25 USDx 04 Nov
- Sold USDx + \$100 USDx 03 Nov
- Sold USDx + \$100 USDx 03 Nov

Cancel Purchase

Steve Kirsch @stevekirsch5000

**Finextra**

Dec 6, 2019

# Deutsche Bank predicts cryptocurrency could replace fiat by 2030

Deutsche Bank has published its outlook for the decade ahead, predicting growth in appeal of cryptocurrency given the fragility of fiat money.

Now what?

2

Options

# Option #1

## Pass



# Option #2

## Provide a viable alternative



“We have a responsibility to be at the cutting edge of the debate. In fact, there is really no choice but to do so, as otherwise events will overtake us.”

**Agustín Carstens**  
GM, Bank for International Settlements

# Option #2 Play



because there is clearly a demand out there that we have to respond to.



258.9K views

0:21 / 0:22

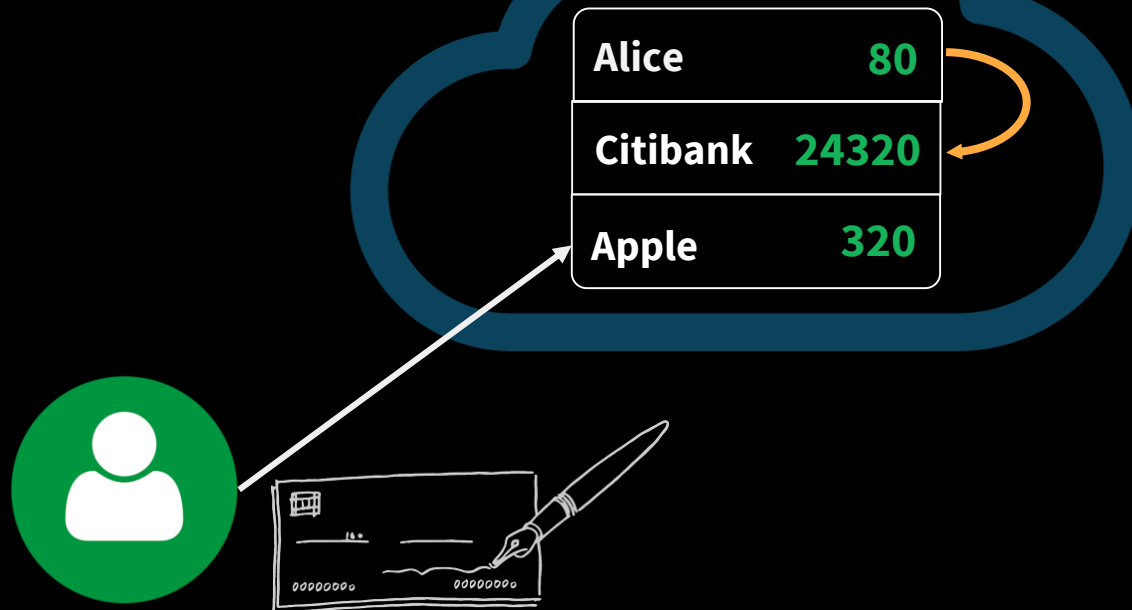


**How to modernize?**



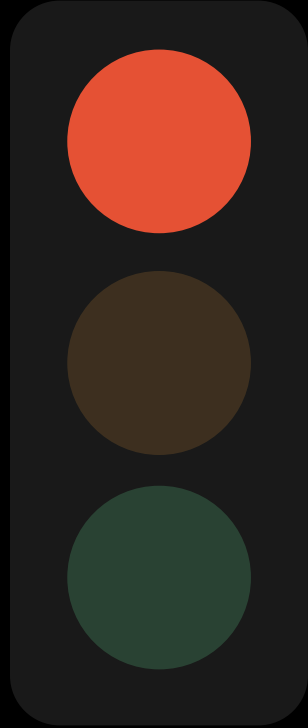
CBDC is a hot topic

## Shared ledger @ CB

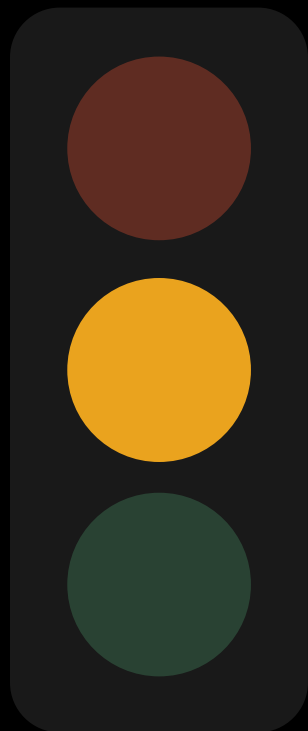


3

**Points of view**



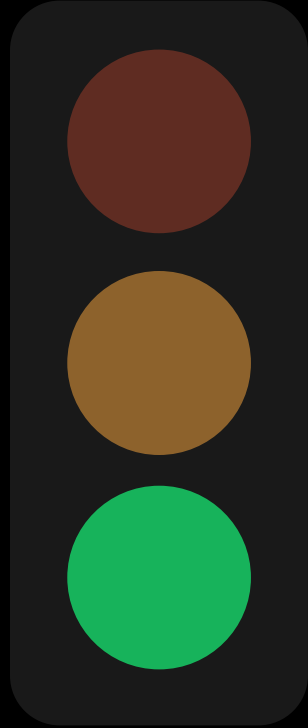
## **Central Bank Digital Currency Threatens Financial Privacy and Economic Growth**



**BNN**  
Bloomberg

## **ECB says it may need its own digital euro if payments drive fails**

The European Central Bank is willing to develop its own digital currency if the private sector can't make cross-border payments faster and cheaper.

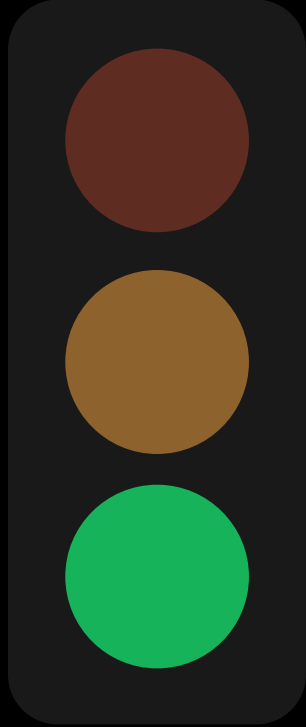


**Bloomberg**

Cryptocurrencies

## **BIS Wants Central Banks at Center of Digital Cash Revolution**

Central banks must embrace the revolution under way in digital money to ensure they remain at the heart of the global payments system, according to the head of the Bank of International Settlements.



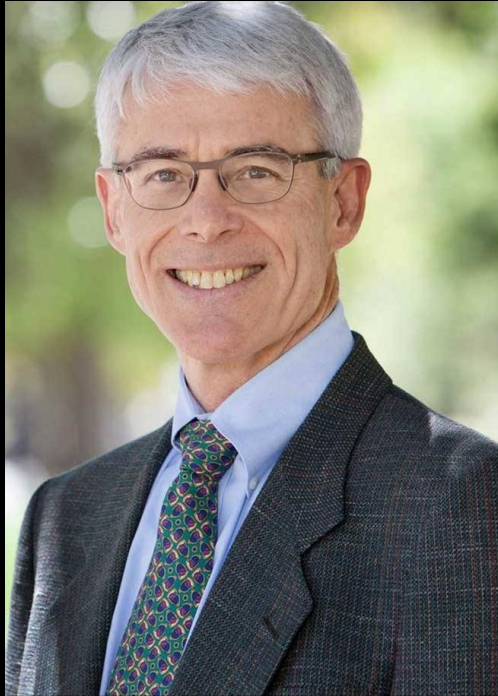
**Finextra**

December 10, 2019

## **Lithuanian central bank urges peers to join digital currency goldrush**

The Bank of Lithuania is stepping up its research into the implications of offering a central bank digital currency, publishing a new research paper highlighting CBDC design choices as well as monetary policy and financial stability implications.

**Who is right?**



“Most big central banks will not adopt CBDCs, except as a last resort. They will first attempt to **upgrade** the **bank-account-based** payment rails.”

**Darrell Duffie**

Dean Witter, Distinguished Professor of Finance,  
Stanford University



**Modernization**



**CBDC**



# Proof that Duffie, ECB are right

∃ better path w/o CBDC

Greater benefits + lower risks

(the CBDC advocates just didn't know about it)

## You want to ...

1. Modernize payments
2. Solve x-border
3. Defend against Libra, Transferwise, ...
4. Avoid **all** the CBDC downsides
5. ↑ transparency + control
6. ↑ safety + soundness

## ... and dramatically improve every use case

Cross-border payments

Capital markets

FX trading

B2B payments

Remittances

P2P payments

Treasury cash management

Intra- and interbank payments

→ cashless society

Enabling the unbanked

Trade finance



Good news:  
you can have it all.

USING A NEW GLOBAL FRAMEWORK  
FOR BANKS TO  
COOPERATE AND WIN  
USING cbDC (not CBDC)

... and your banks can enable it  
INSTANTLY



IT changes

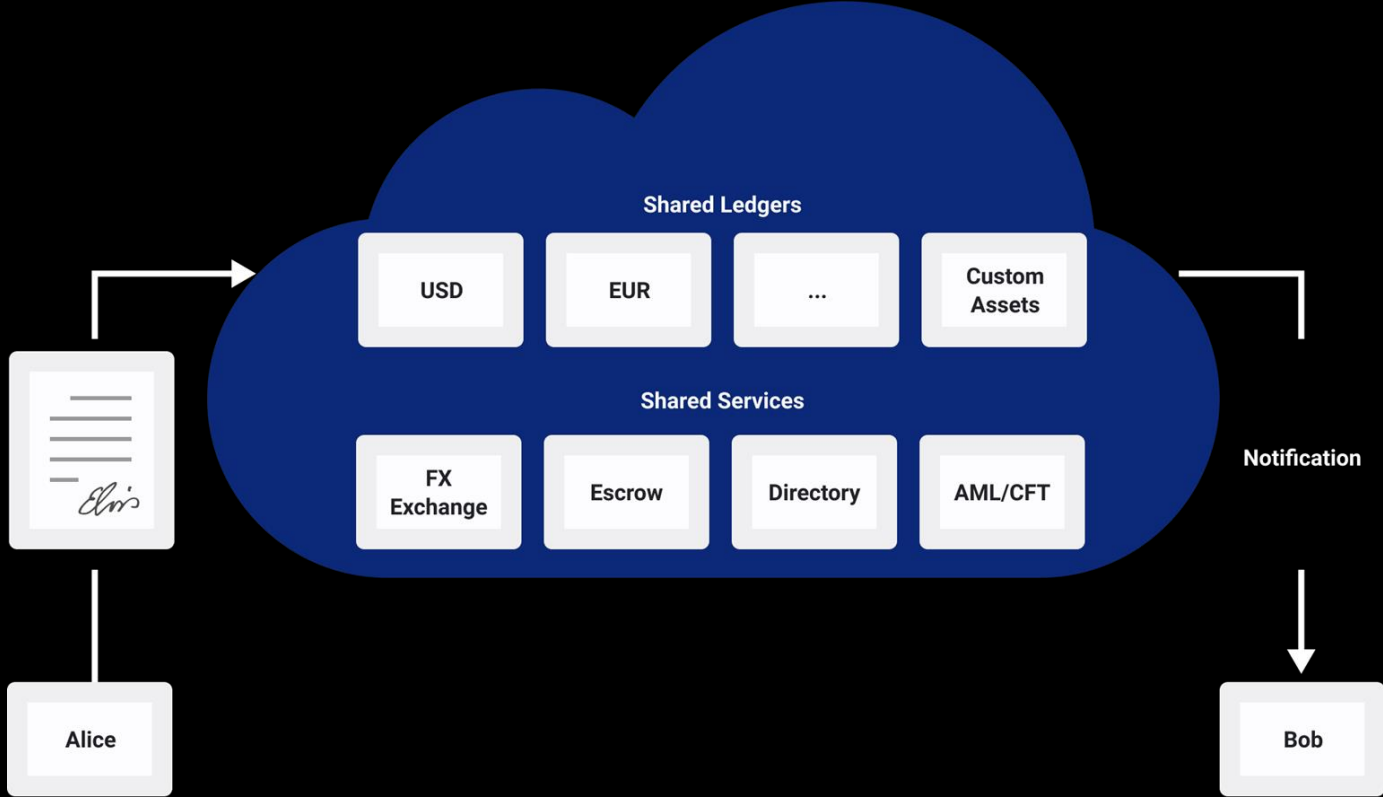
... at **NO COST** to the bank or  
central bank.



...and banks can still compete  
(using the same **modern** rails)



# Cloud-based shared services



# Today

Bank A	2505
Bank B	1927

CB ledger



CB ledger

Sponsor	-150
Bank A	100
Bank B	50

M0 ledger

24x7x365

Always match



Sponsor	150
Bank A	2405
Bank B	1877

CB ledger

8x5

<b>Bank A</b>	<b>-80</b>
Alice	5
Bob	35
Charlie	40
<b>Bank B</b>	<b>-65</b>
Denise	20
Eric	30
Fred	15

**M1 ledger**  
24x7x365

Operated  
by RTGS  
operator

<b>Sponsor</b>	<b>-150</b>
Bank A	100
Bank B	50

**M0 ledger**  
24x7x365

# Parallel, independent systems

Core Banking  
(separate ledgers)

<b>Bank A</b>	<b>-225</b>
Alice	75
Bob	100
Charlie	50

<b>Bank B</b>	<b>-146</b>
Denise	25
Eric	11
Fred	110

<b>Bank A</b>	<b>-80</b>
Alice	5
Bob	35
Charlie	40
<b>Bank B</b>	<b>-65</b>
Denise	20
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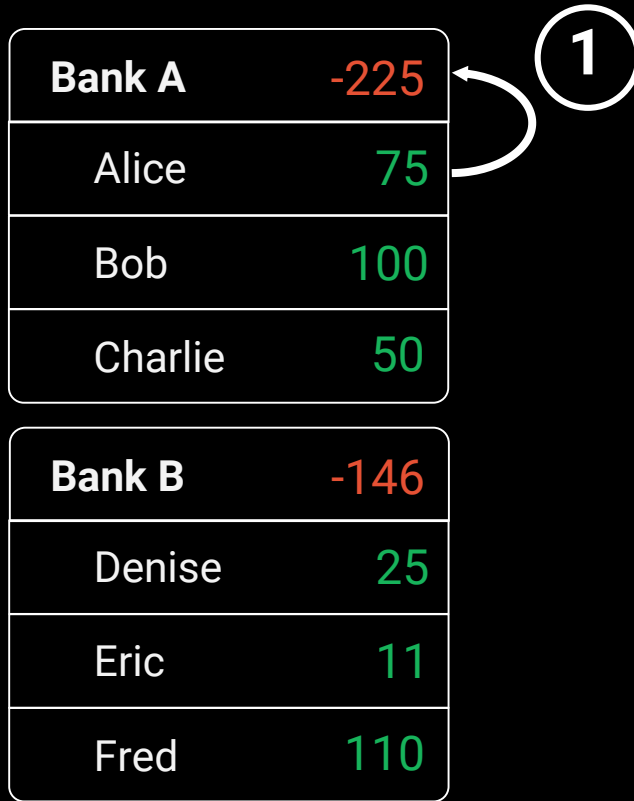
Digital Money  
(one ledger for all banks)

# Loading digital money account

<b>Bank A</b>	<b>-225</b>
Alice	75
Bob	100
Charlie	50

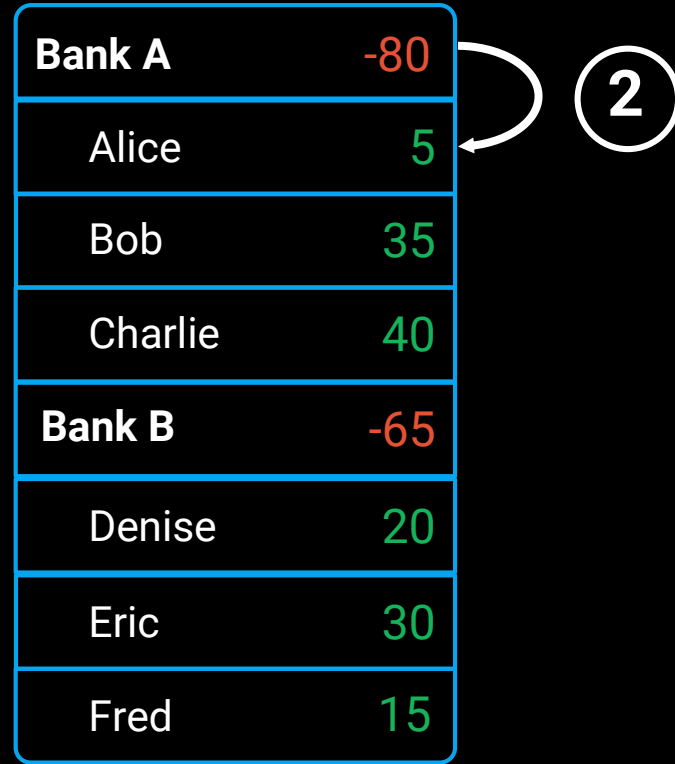
<b>Bank B</b>	<b>-146</b>
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Alice	5
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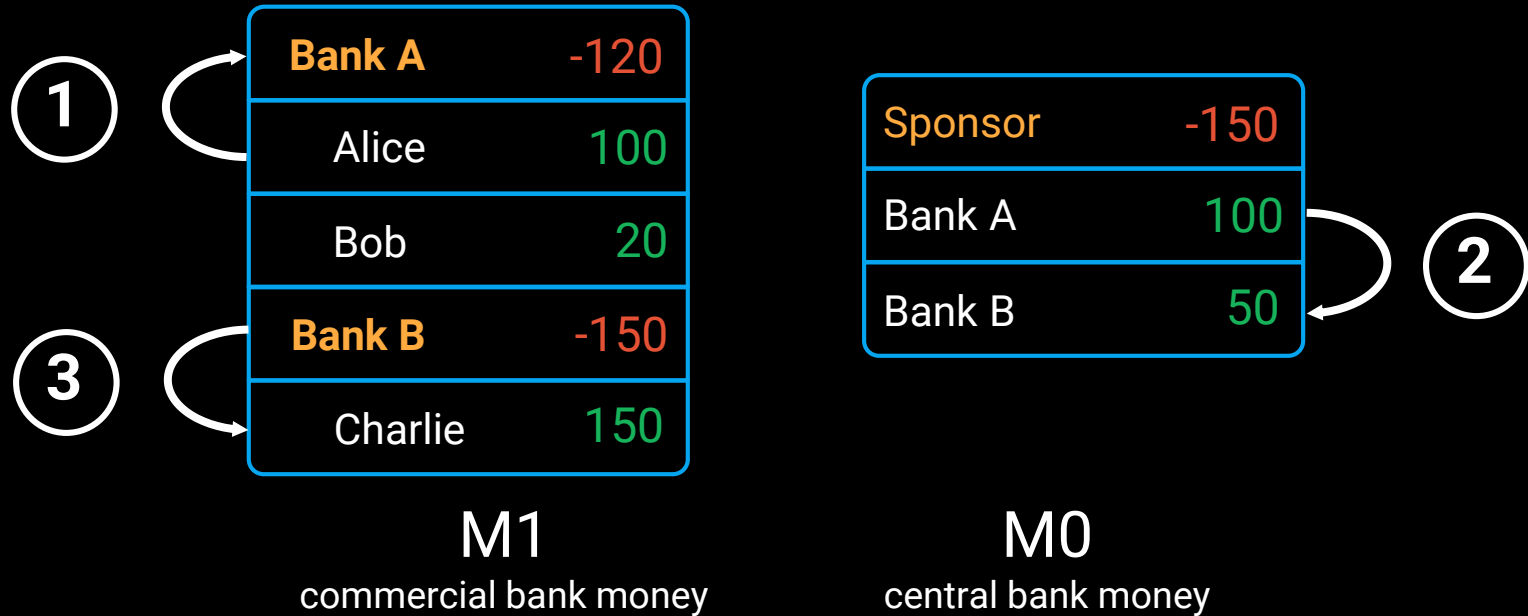
  

<b>Bank B</b>	<b>-65</b>
Denise	20
Eric	30
Fred	15





# M10 payments are just like RTGS payments



# One ledger per currency hosted in country

<b>Bank A</b>	<b>-80</b>
Alice	5
Bob	35
<b>Bank B</b>	<b>-65</b>
Denise	20
Fred	15

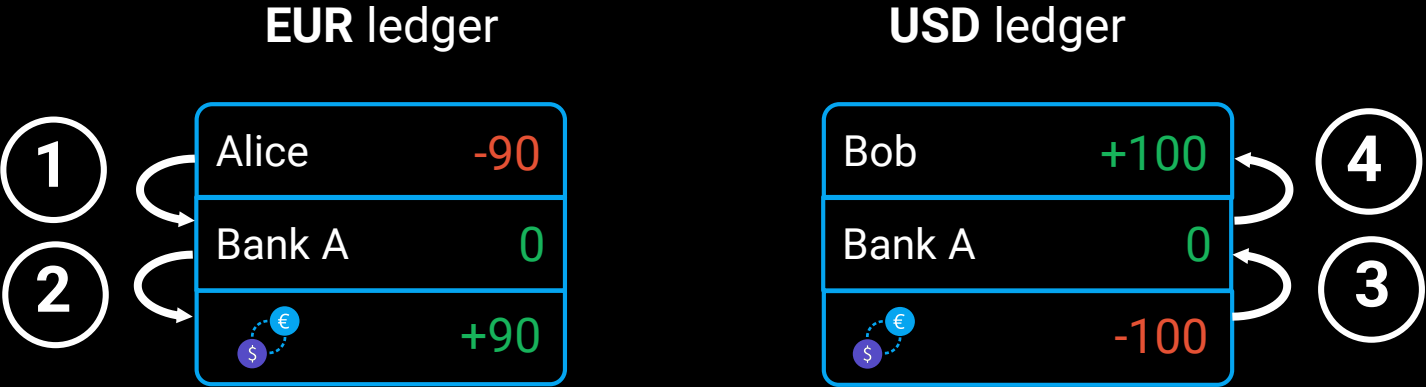
USD ledger (M1)

<b>Bank C</b>	<b>-200</b>
George	125
Sophie	75
<b>Bank D</b>	<b>-150</b>
Barbara	40
Joe	110

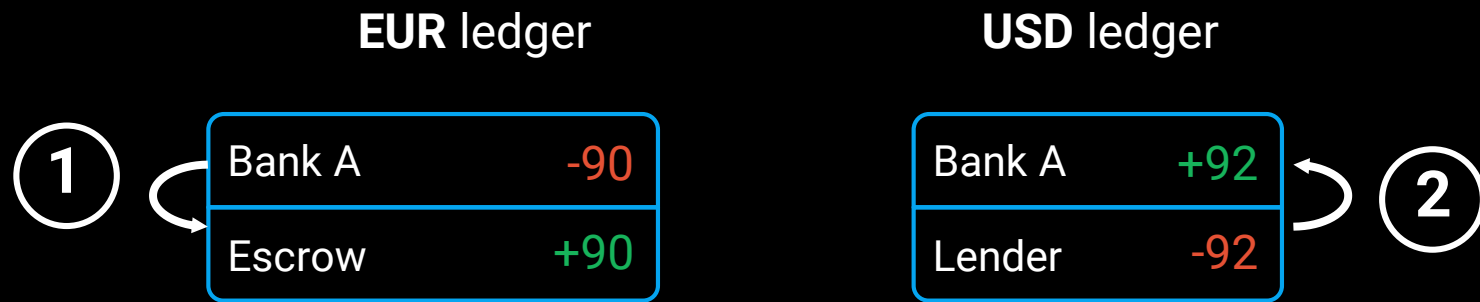
EUR ledger (M1)



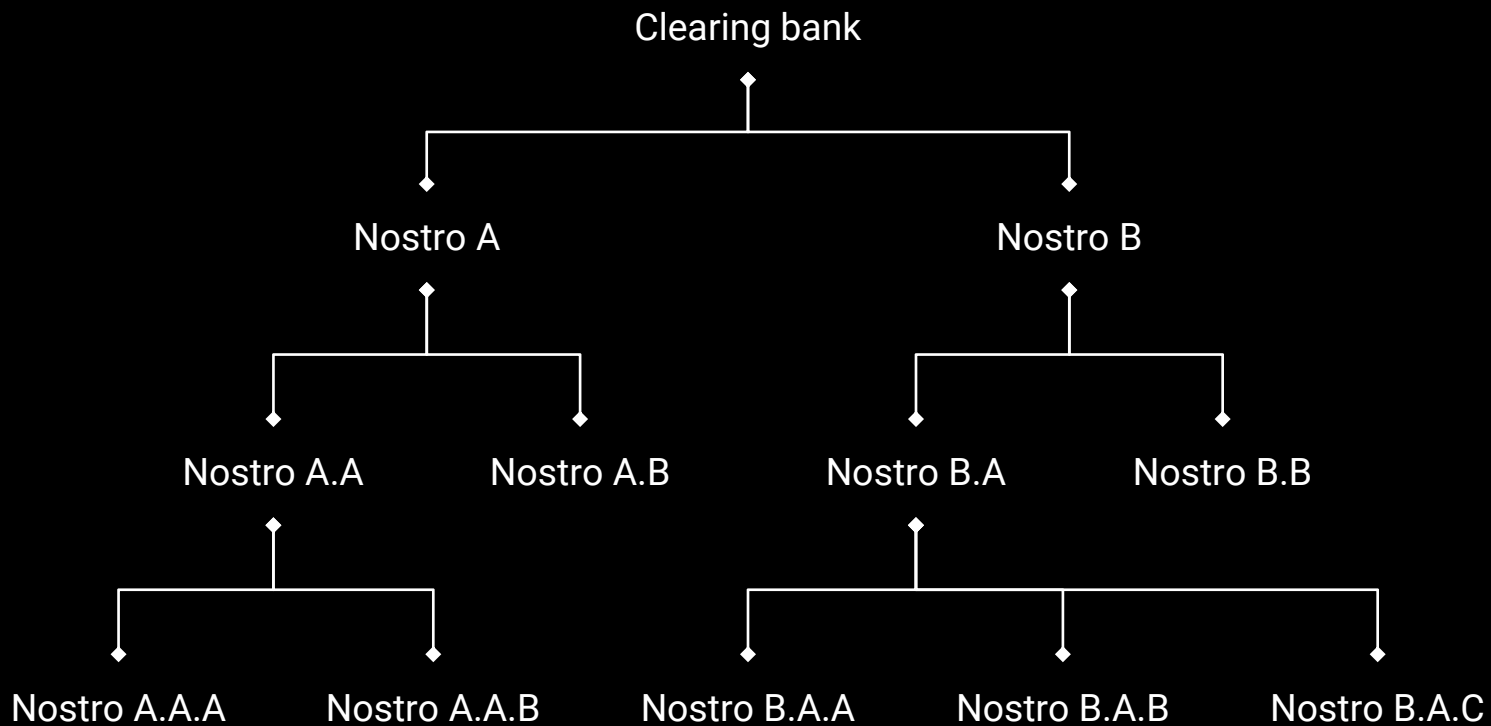
# Cross-border is 4 payments



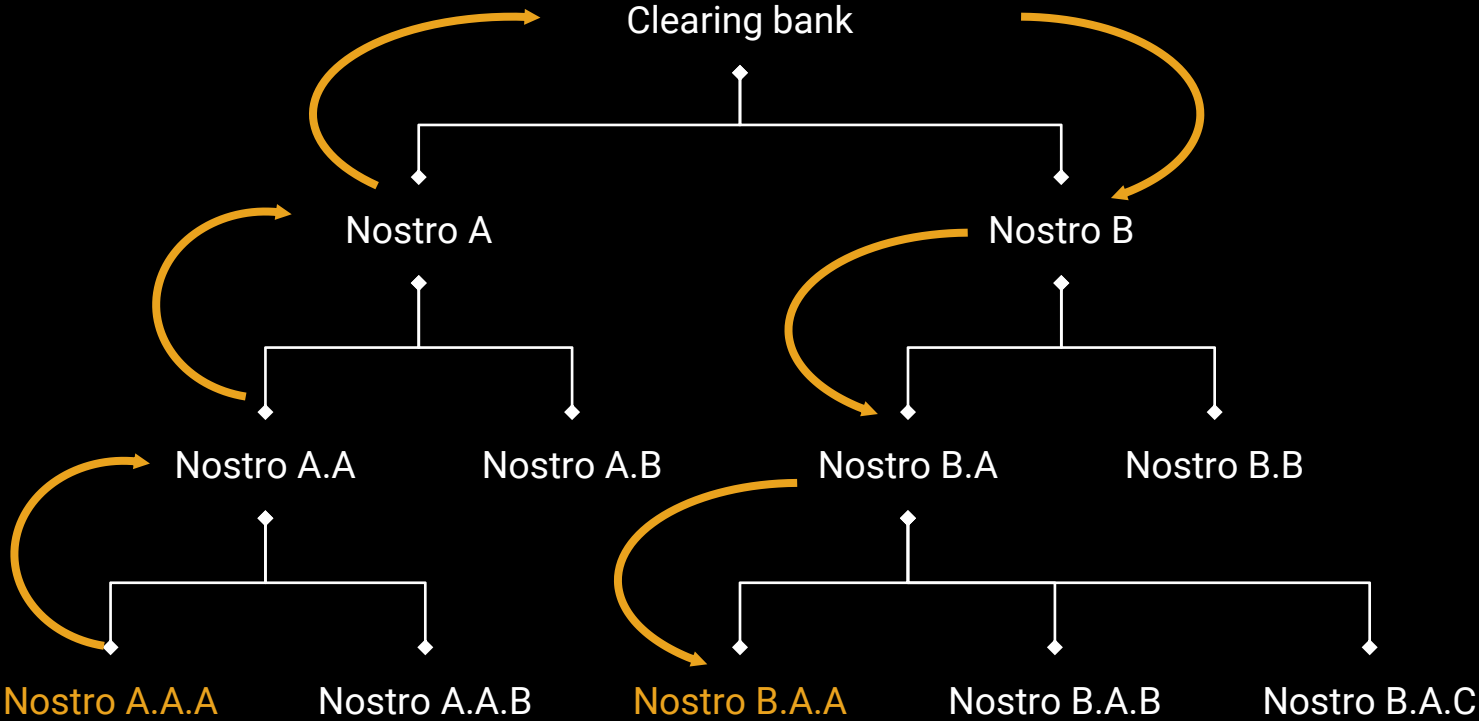
# Atomic PvP and DvP (e.g., FX swaps and repos)



# Traditional nostros

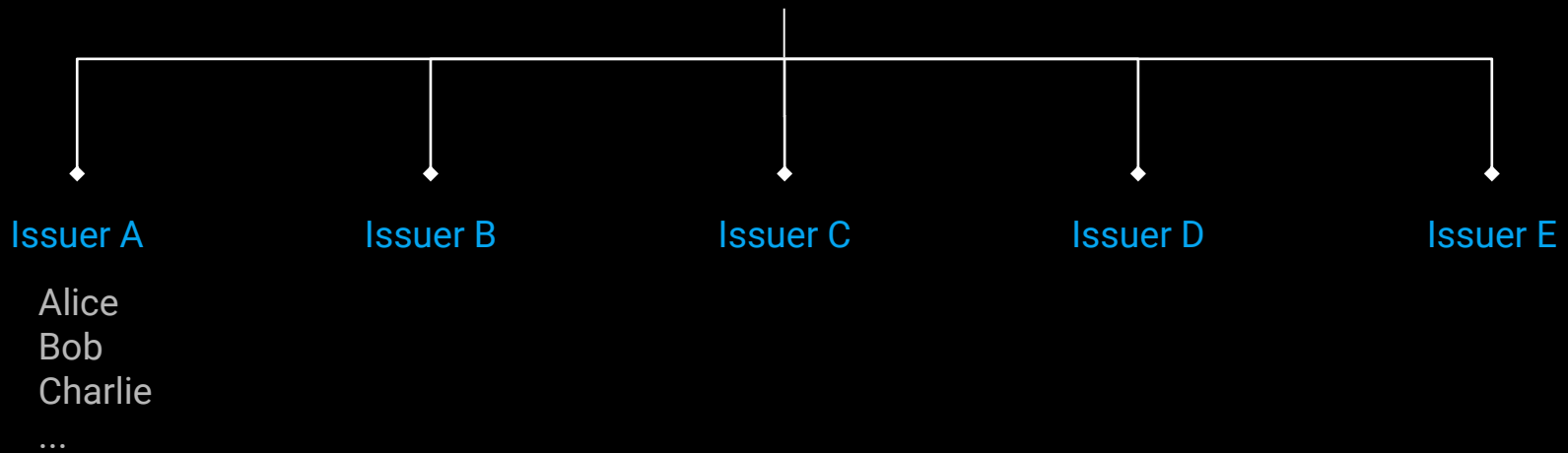


# Nostro transfers are painful: hard to get, risky

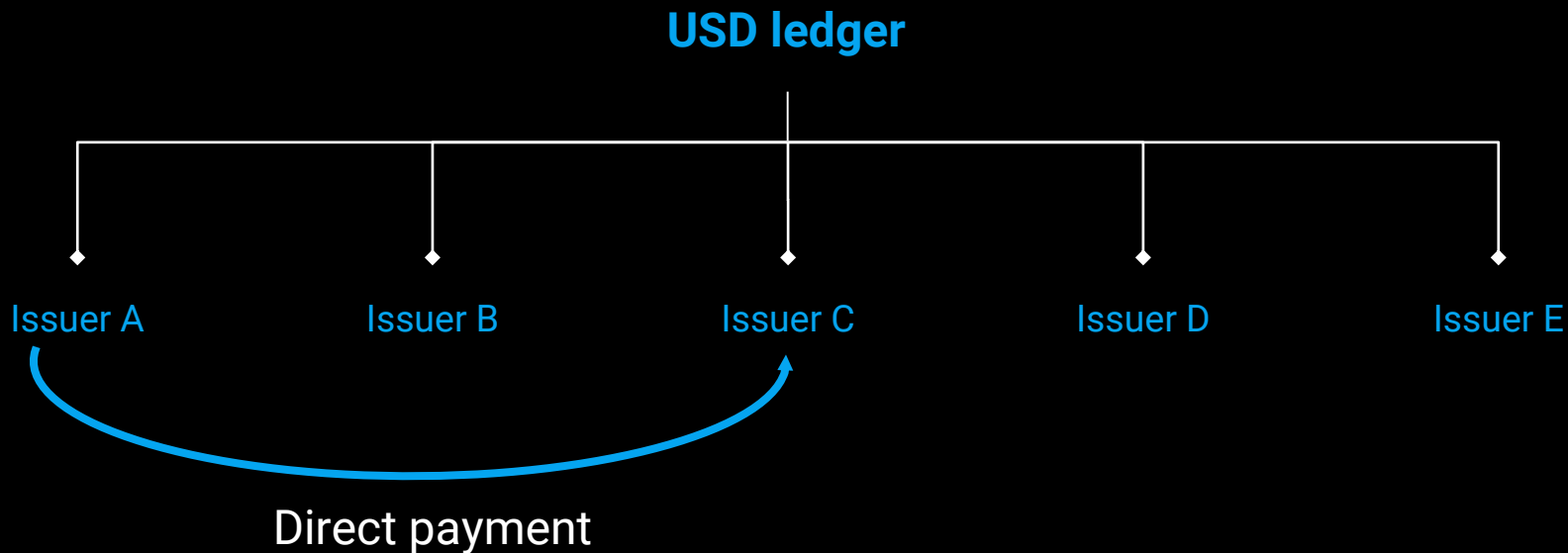


# Flat model

## USD ledger



# All payments are point-to-point



 **Nostros**  
**Correspondent banking**





Blockchain  
Cryptocurrencies

# Ledger accounts are **easier to get than nostros**

1. Sponsor avoids money flow
2. Full transparency for regulator
3. Banks can't cheat\*

\* e.g., disable screening

**WIN<sup>5</sup>**

**Digital money will  
be transformative**



**My chess secret**

**To always win...**

**Always make the best  
possible move!**



# Your best move...

Learn about the options  
Choose 1 to pilot  
**Invite** banks, CBs to join

Low effort + risk for CB, banks



“YOUR **FUTURE** IS CREATED BY WHAT

YOU DO { **TODAY** }  
~~NOT~~ ~~TOMORROW”~~

This is your **Uber moment**.  
What are you going to do?



Choose 1 **NOW**:

1. Agree and win
2. Disagree and ...



# Benefits



# Overall benefits

Widely accessible risk-free medium of payment

Multi-jurisdictional

Solves instant cross-border 24x7

Improves AML/CFT rates

Easy for all to adopt

Safe + sound

Scalable throughput >1M tps, msec latency

Open API: easy, secure

Preserves privacy

Banks can monetize

Use as a backup FMI



# Central banks

- Modernize all payment use cases esp x-border
- Full, real-time bird's eye **visibility**, control
- Hosted “in country”
- Higher financial crime catch rates (only 1% today)
- Understandable design that mimics status quo
- Reduces internal bank fraud (can't “cook books”)
- Easy to upgrade
- Increases resiliency (backup FMI)
- Enables unbanked to pay digitally
- Facilitates move to cashless
- Avoids risks associated with CBDC, yet provides same benefits
- Objectively ranks banks who are underperforming w.r.t. KYC
- Banks can no longer “turn off” AML to cheat (no longer under their control)



# Banks

- Minimizes x-border pain points; esp. useful for intra-bank for multinational banks
- Instant settlement, 24x7, local and x-border in <100 msec with superior STP rates
- Issued digital money is fungible; doesn't drain M0 from the bank
- Competitive response to new players who have taken 25% payment volume
- Banks can set pricing to customer base on individual basis
- Easy to understand, deploy
- Superior liquidity management (even when CB is closed)
- Reduces regulatory costs and risks
- Supports end-to-end ISO-20022 (up to 100M of metadata)
- Preserves user privacy
- State-of-the-art features / updates including request to pay, x-border pull
- Low operating costs
- Predictable x-border costs w/o need to negotiate bilateral agreements

# Exchanges

- Enables 24x7 trading w/flexible DvP settlement of digital assets
- Support for DvP of currency + tokenized assets (both fungible and non-fungible)
- Instant settlement (25 msec typical)
- Very low cost
- Move very large sums instantly and securely
- Digitally signed open API enables full automation
- Get push notifications on receipt of funds so can instantly send out when received
- Money moved into an exchange can be credited instantly 24x7
- Money moved out of an exchange can be left as digital cash or instantly deposited in customer's bank account
- Exchange can be given rights to extract funds for margin calls, even x-border
- Widens accessibility to various participants

# Consumers

- Minimizes x-border pain: cost, speed, transparency
- Minimizes errors and fraud (recipient reputation, validation)
- Preserves user privacy
- Instantly convert between currencies, e.g., hold in USD
- Enables unbanked to hold funds
- User-friendly app (like Venmo)
- User can authorize other apps like Uber, etc.
- Send money instantly, low cost, 24x7
- Eliminates passwords, easy to use, very secure (digital signatures)

# Businesses

- Minimize x-border pain points
- **24x7, instant** settlement both local and x-border
- Large and small payments
- Single open digitally signed API across all banks enables automation
- Corporate treasurer can get account balances and transfer funds 24x7 eliminating time in transit and dead funds
- B2B payments can be made at last minute
- ISO-20022 can be attached to the payment without truncation allowing STP for reconciliation

# Software developers

- Open API with digital signatures (no more dealing with unique bank APIs)
- API is easy to understand and use; **securely transfer assets with 1 line of code**
- API allows for pre-authorized pulls, e.g., Uber can pull up to \$100/mo, even if cross border
- Support for multiple digital signature algorithms (support for secure enclave in mobile phone, ledger Nano, enterprise HSMs, ...)
- Modern APIs and SDK
- High performance (1M tps, msec latency)
- One API supports **currency + tokenized assets**, both fungible and non-fungible
- Escrow service for 24x7 **instant exchange of assets w/o counterparty risk**