

Central Bank Digital Currency

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September 2023

Agenda

Introduction to Central Bank Digital Currency (CBDC)

Why CBDC?

Implementation of CBDC

The technology behind CBDC

Introduction to CBDC

Digital equivalent of cash

Liability of Central Bank

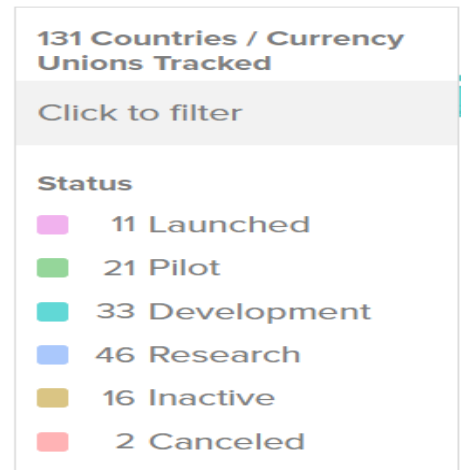
Guarantee of Central Bank

Crypto-currency on DLT Block-chain

About 110 countries engaged in CBDC projects, 64 in advanced stages (driven by BIS)

Two types - Retail and Wholesale CBDC

Multiple CBDC Bridge (mBridge) Project Dunbar Project Sela Project Icebreaker Project Mariana Project Jura Onyx/Multiple wCBDC
Project Rosalind Project Aurum Project Helvetia Project Jasper Project Aber Project Polaris Project Nexus Project Tourbillon
Project Cedar/Ubin



Why CBDC?

Why CBDC?

- Access to sound / safe money for general public (retail use case)
- Cross border Payments (wholesale use case)

Access to sound money

Retail CBDC

Evolution of Money

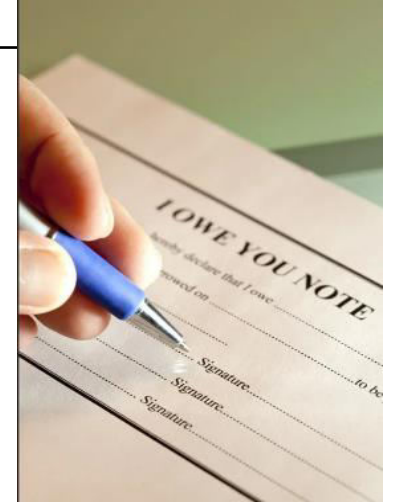


Gold & Silver Coins

Problem of logistics and safety

Goldsmiths had vaults

Goldsmiths stored gold in vault in exchange to IOU Notes ('I owe You')



Idea of "Credit creation"!

Result - 'leverage' (More IOU notes in circulation compared to gold)

Run on the goldsmiths!



Creation of Banks



Creation of Banks

Bank IOU notes comes in circulation

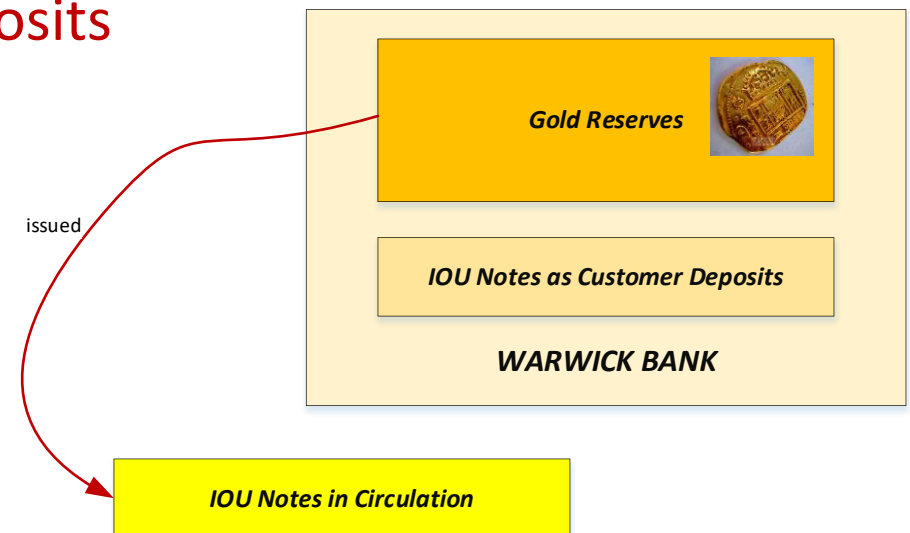
IOU notes becomes the new currency (~money)

Banks started to hold the IOUs' as customer deposits



Credit creation & over leverage continues

Run on the bank!



Creation of Central Banks



Creation of Central Banks

Bank Reserves (Gold)

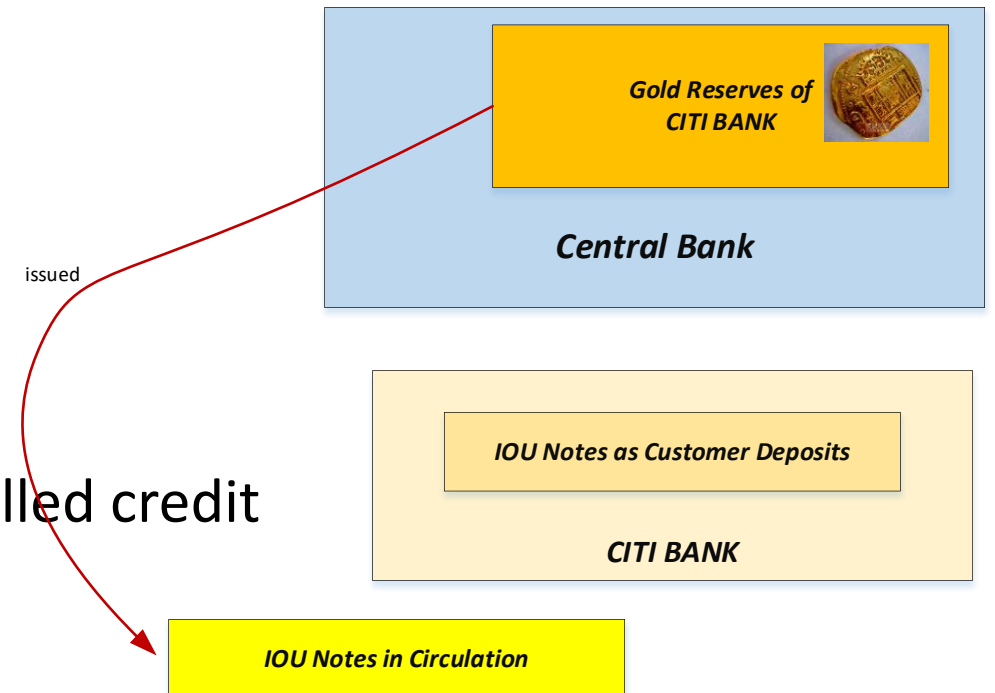
Central Banks IOU notes comes in circulation

Two tier structure:

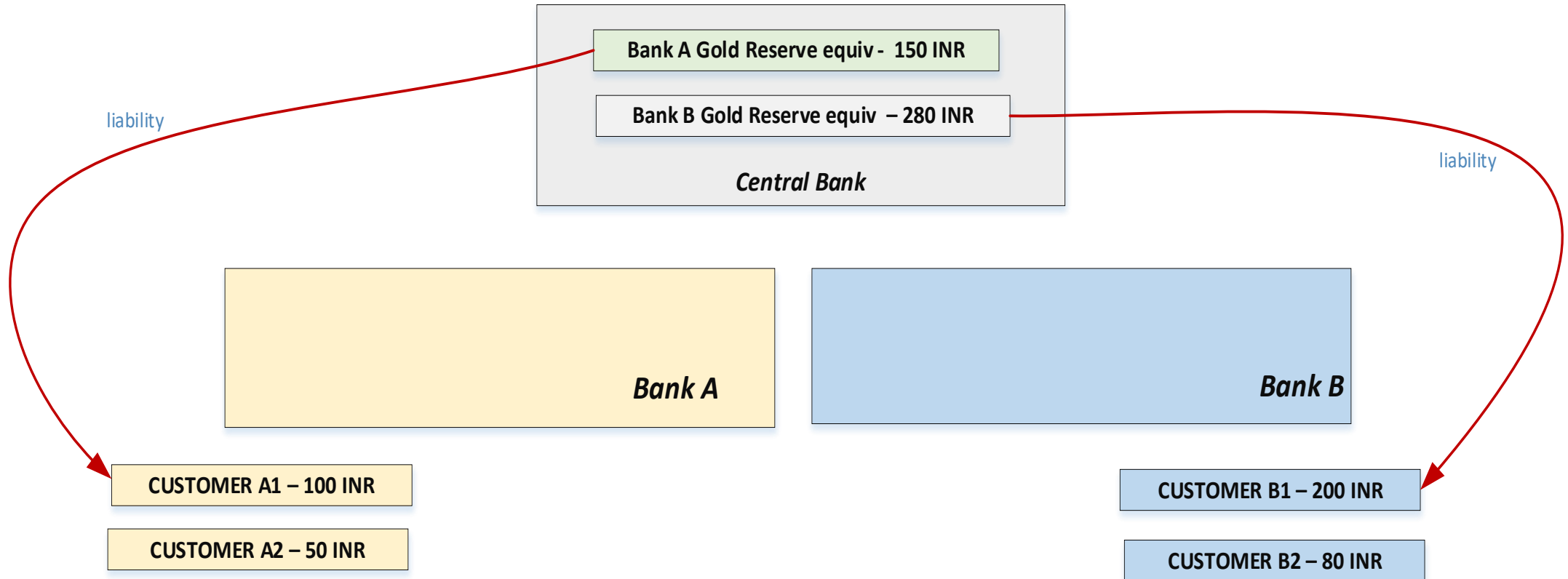
- Central bank held the reserves
- Bank held the IOUs deposits

Banks lent out the customer deposits

Fractional Reserve Ratio introduced for controlled credit



Creation of Central Banks



but more problems ...

Age of industrialization

Easing of reserve ratio for economic reasons (even abolishment)

Gold replaced by other asset classes

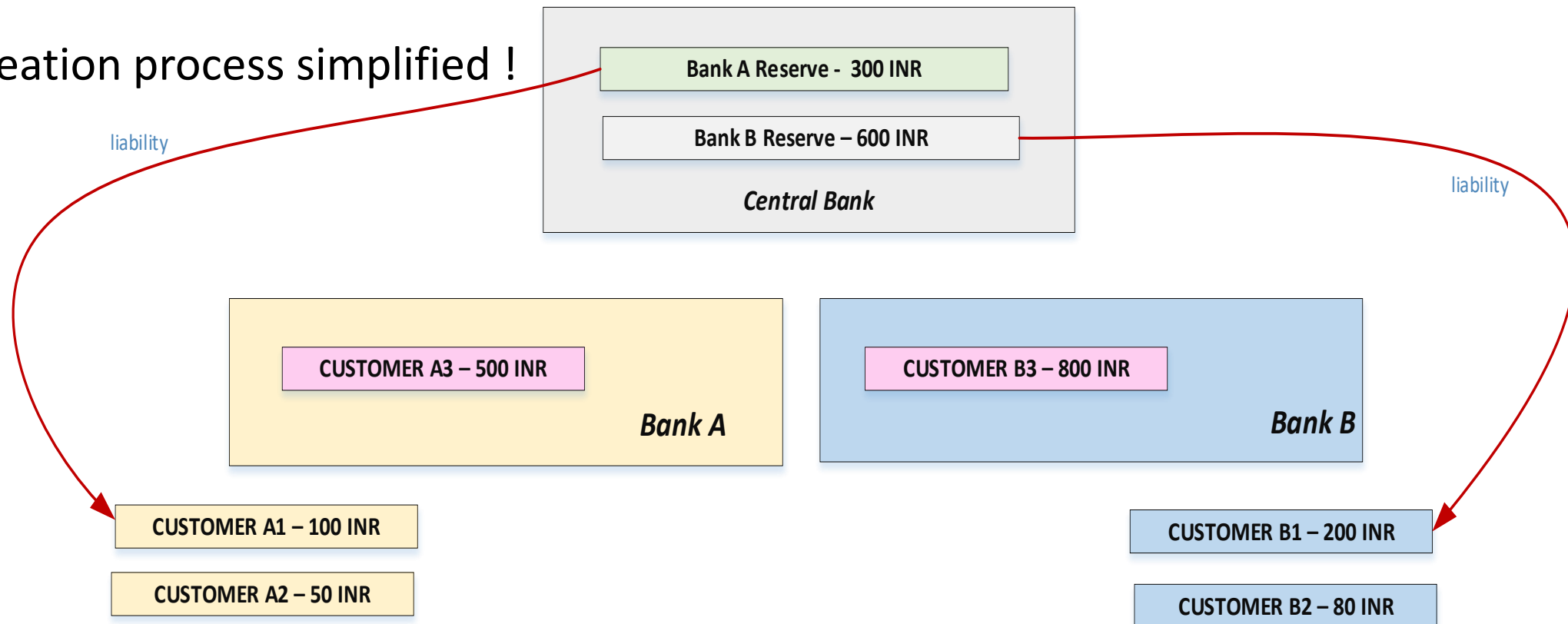
Introduction of Electronic ledger

Electronic Ledger

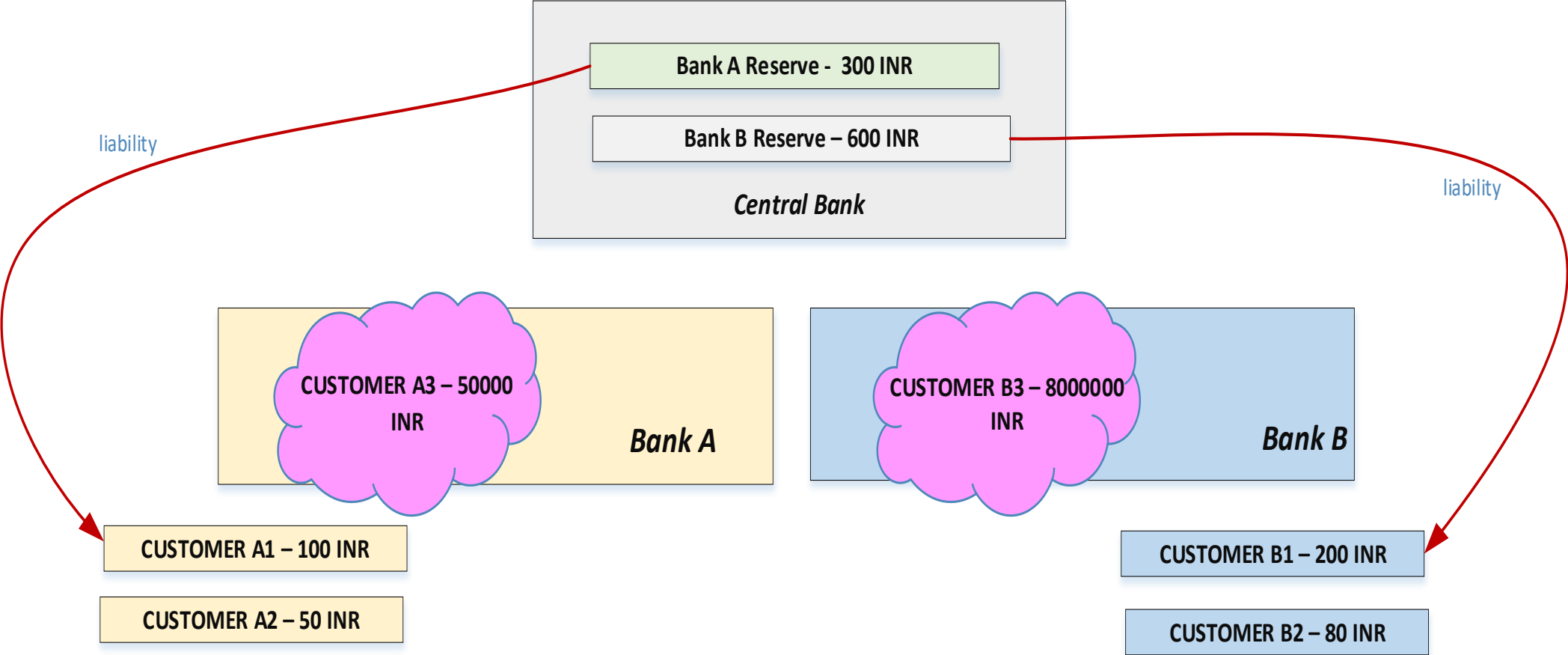
Deposits stored as 'digits' in electronic ledger

New form of money

Credit creation process simplified !



Commercial Bank Money – in credit expansion cycle

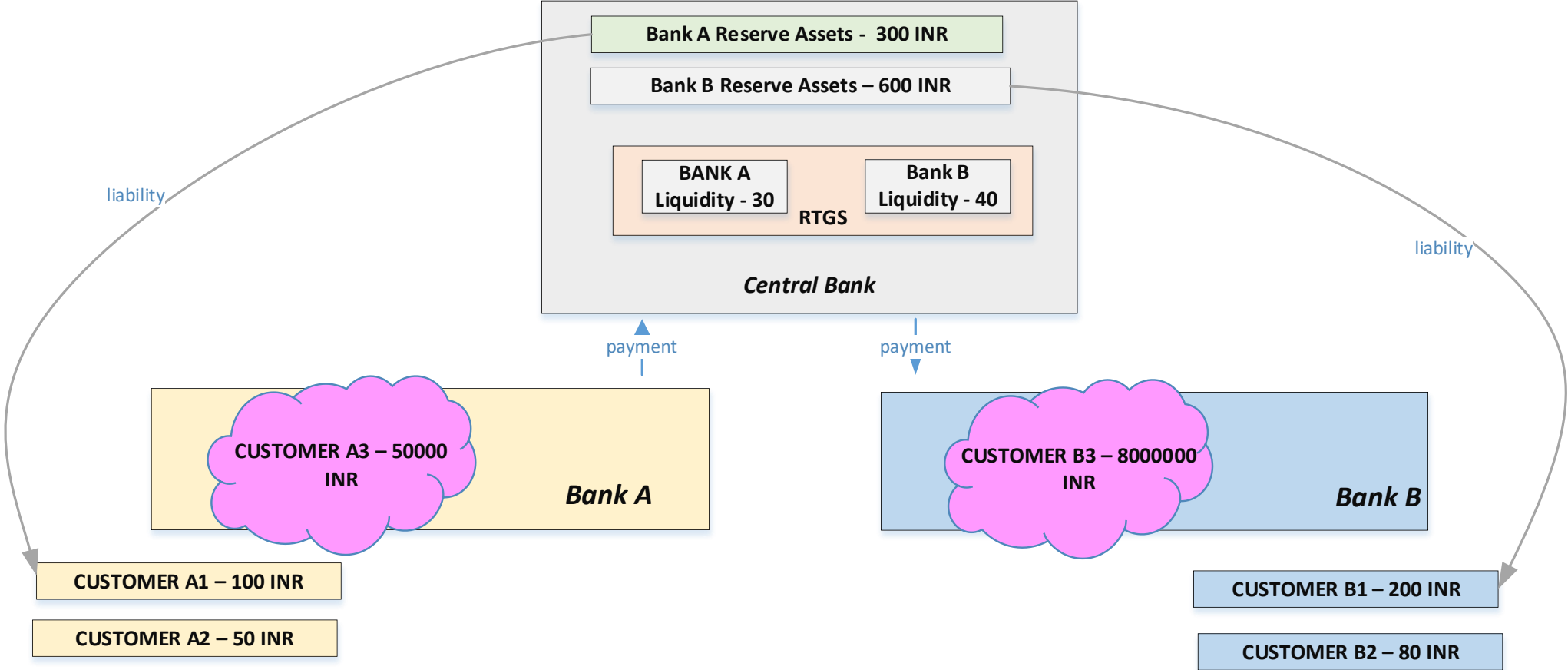


Commercial Bank Money

What limits a credit bubble

- ability to find credit worthy customers
- Liquidity available in central bank (RTGS)

Inter Bank Transfer



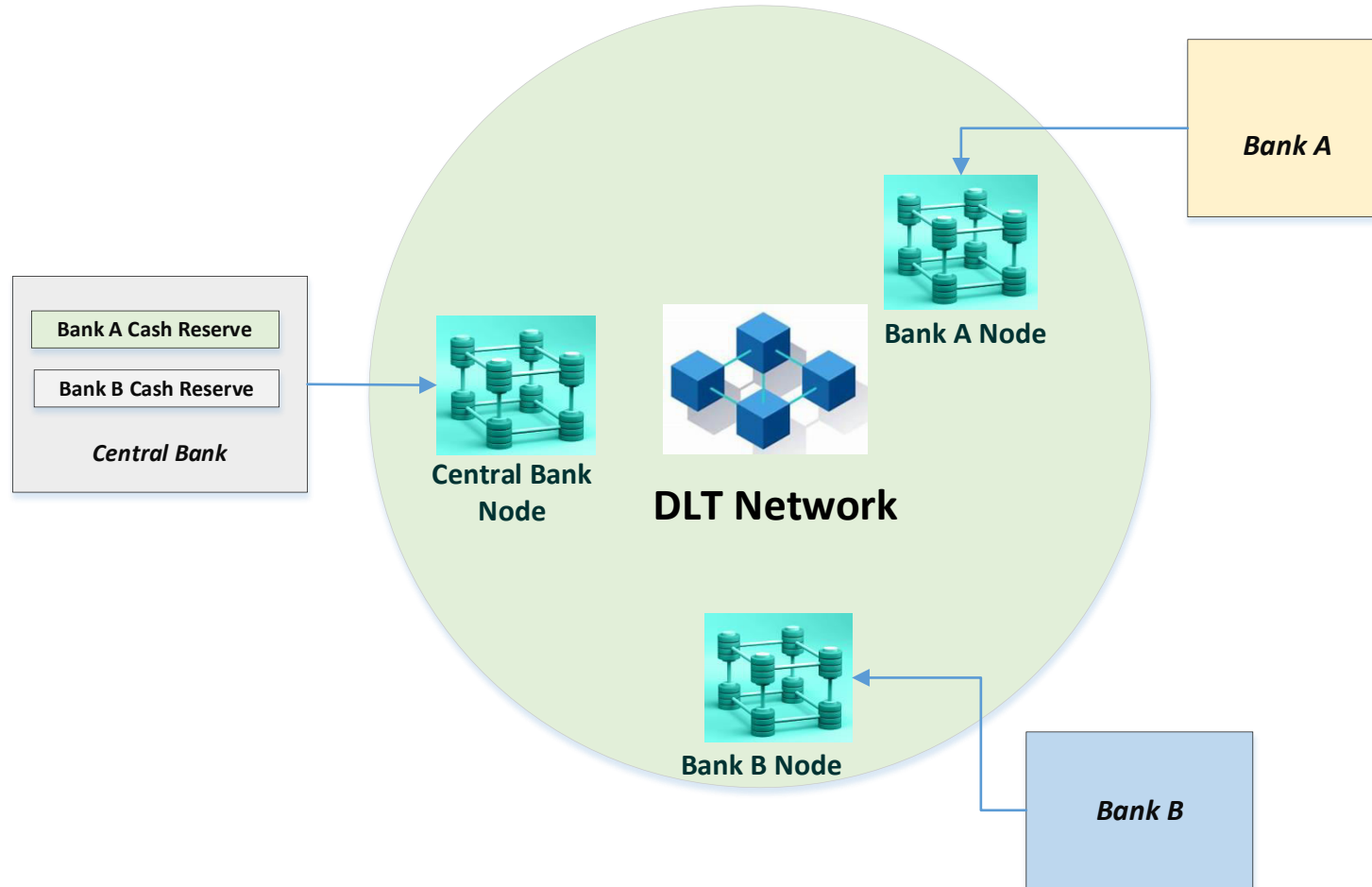
Moral of the story

Two types of money

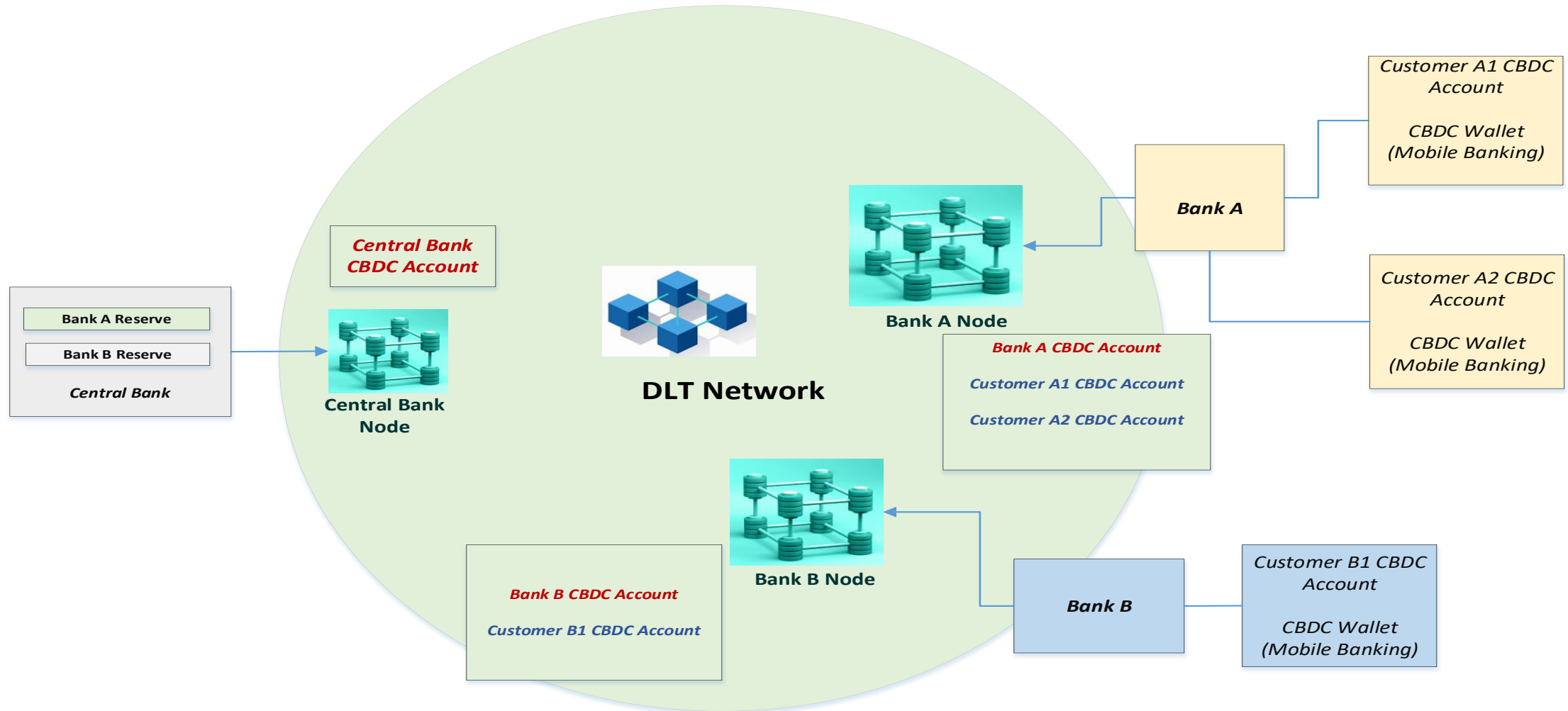
- Central Bank money (notes & coins – and now CBDC)
- Commercial bank money (credit money in electronic form)

So if cash (notes & coins) comes in digital form (CBDC) with all the modern benefits, would you like to have it or not?

CBDC Implementation (Step 1)



CBDC Implementation (Step 2)



CBDC Flow

- Bank request central Bank to **mint** CBDC
- Central Bank takes bank reserves and mints CBDC
- Central Bank **issue** the mint to Bank's CBDC account
- Customer **Buys** CBDC

<< Customers transacts using CBDC >>

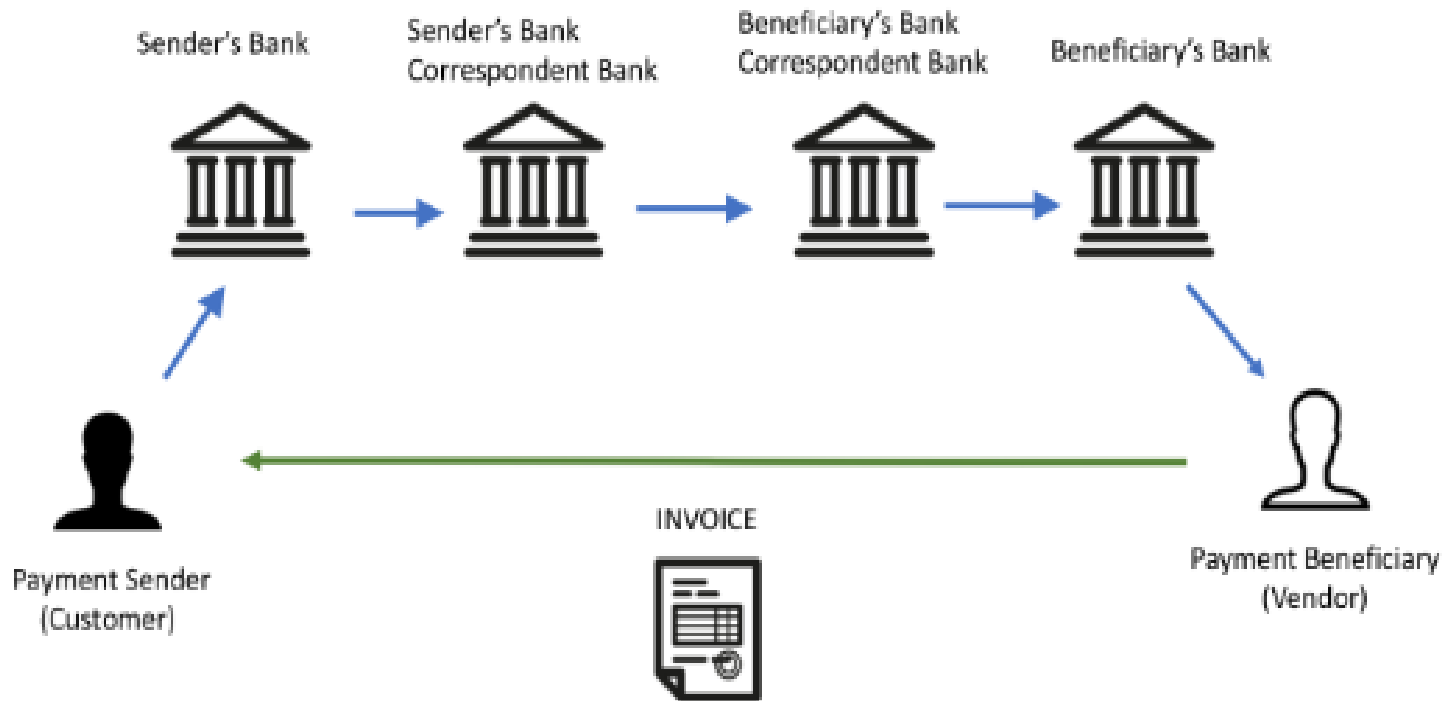
- Customer **Sells** CBDC
- Bank **Redeems** the CBDC with Central Bank
- Central Bank **burns**

CBDC for Cross Border Payments (FX)

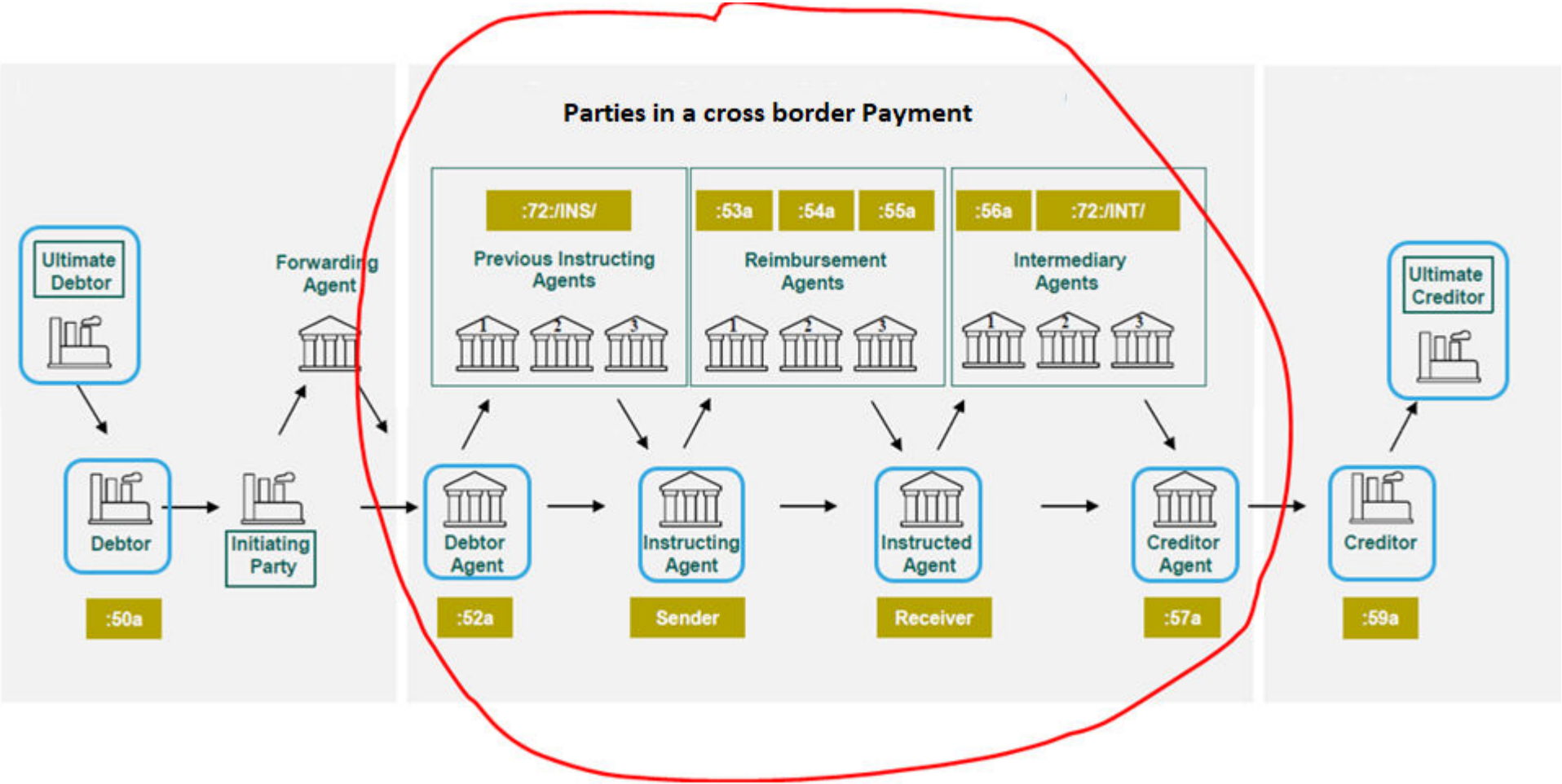
Wholesale CBDC

- Multiple CBDC Bridge (mBridge)
- Project Dunbar
- Project Sela
- Project Icebreaker
- Project Mariana
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Cross Border Payments - basic

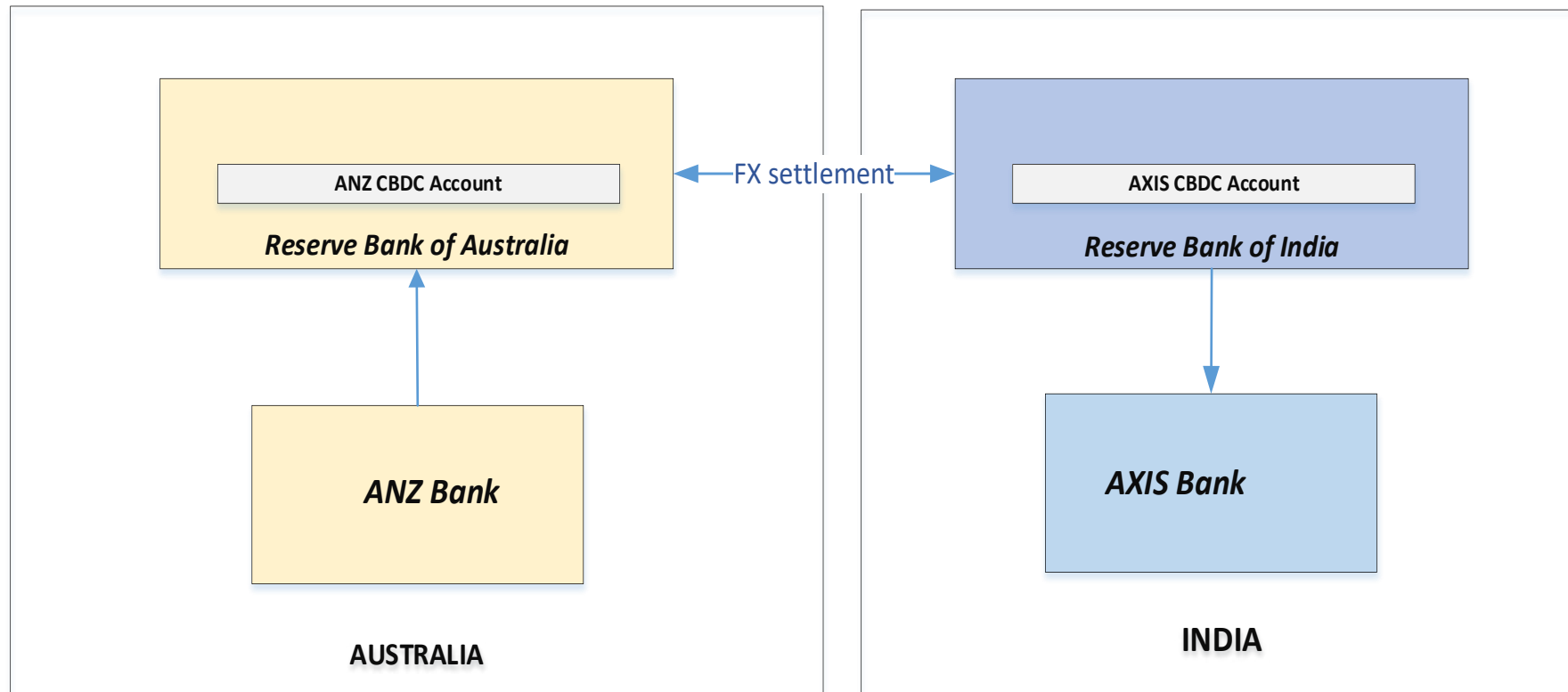


Cross Border Payments - advanced

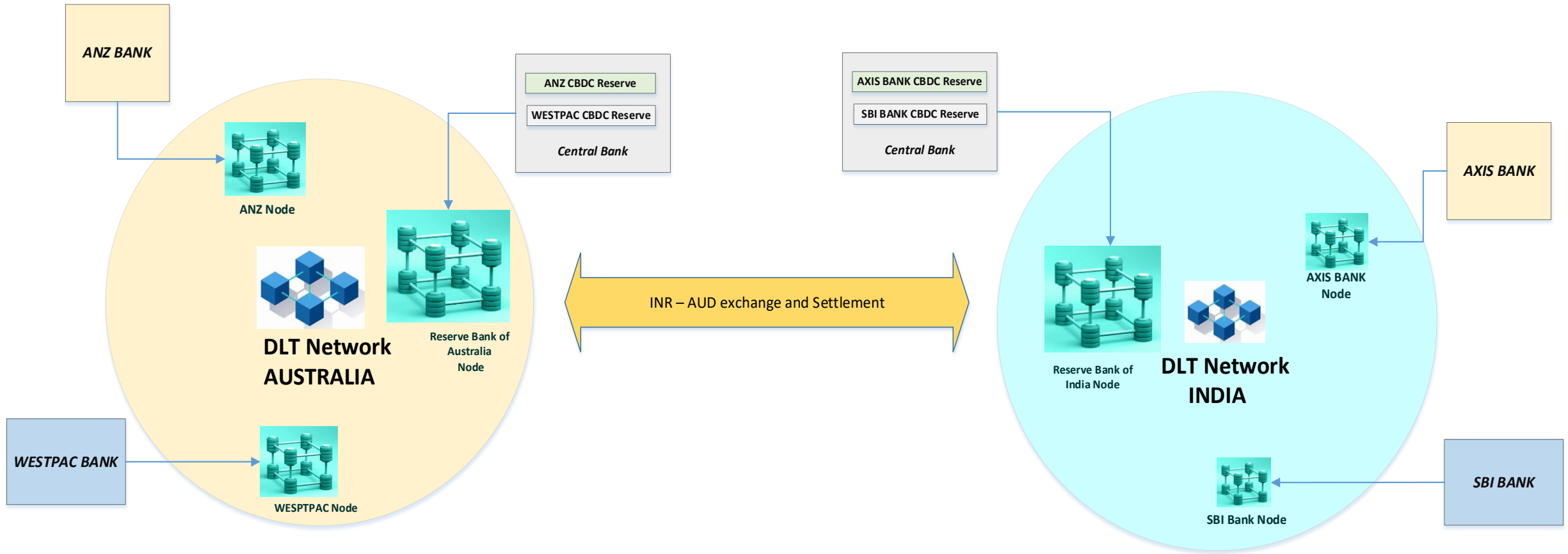


Cross Border Payments via CBDC bridge

Puts Central banks at the heart of International FX transactions.



Cross Border Payments via CBDC bridge



Innovations around CBDC

Tokenisation

- of real world assets
- of deposits

New platforms for Trade and financing

- Unified Ledger
- Decentralised Finance (DeFi)

Elimination of Intermediary (Banks & NBFIs)

Technology Behind CBDC

DLT

Block chain

Cryptography

Digital Signatures



Finextra

Fault lines in the Modern Financial System

Thank You !

CBDC - the waking giant

**An ocean of Money, a
sea of Debt - and the
CBDC lifeboat**

Appendix

Other Benefits

Other benefits

- Improve usability of Central Bank Money

- Dematerialization of Cash

- Better Cross border Payments

- Helps Financial Inclusion

- Avoiding risks of new forms of private money creation