

BS = The Bahamas; ECCB = Eastern Caribbean Central Bank; HK = Hong Kong SAR; JM = Jamaica; SG = Singapore. The use of this map does not constitute, and should not be construed as constituting, an expression of a position by the BIS regarding the legal status of, or sovereignty of any territory or its authorities, to the delimitation of international frontiers and boundaries and/or to the name and designation of any territory, city or area.

# Conceptions of money in the development of CBDCs – a global comparison, and trade-offs

30.03.2022, SUERF Bocconi seminar

Raphael Auer\*

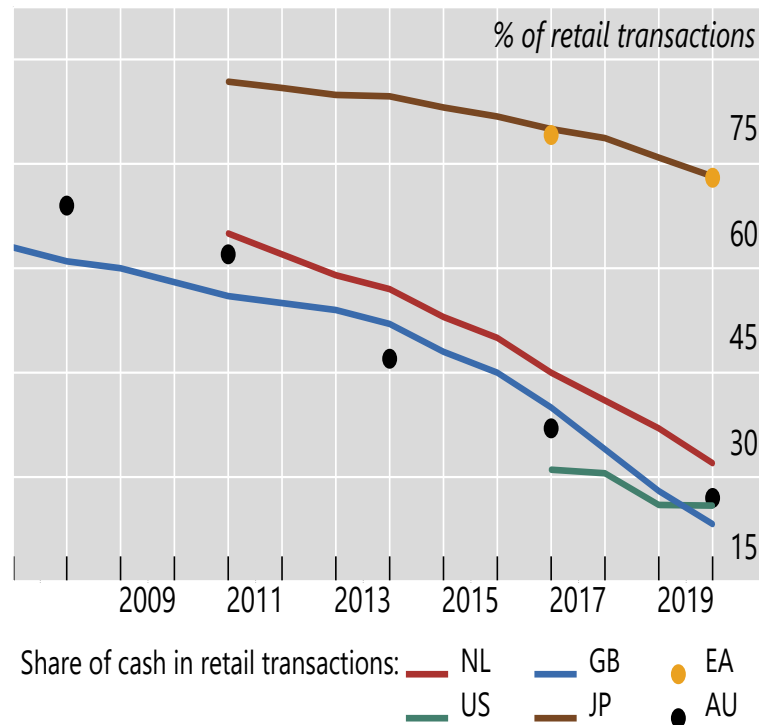
\* The views expressed here are those of the presenter and not necessarily of the Bank for International Settlements

## Conceptions of money in the development of CBDCs

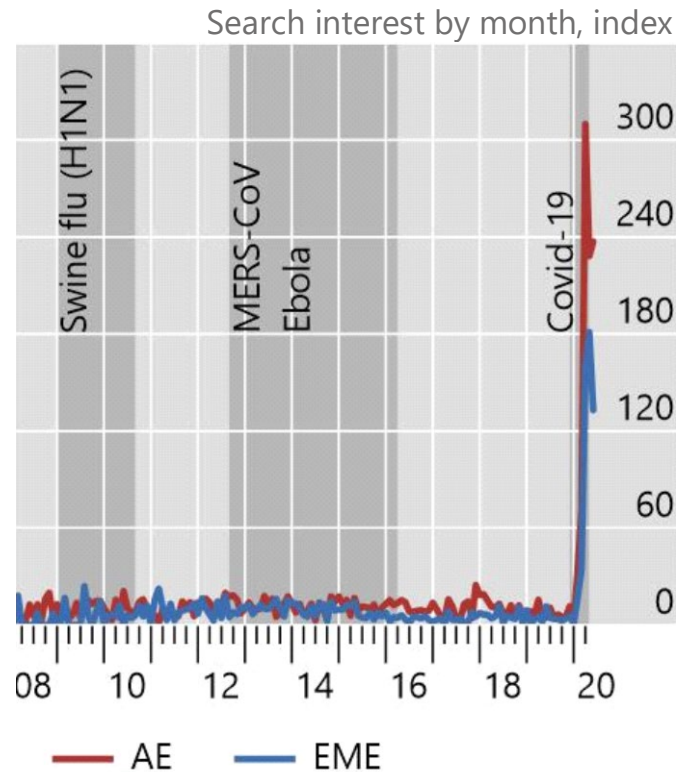
- Money is an alternative to a public ledger that records the history of all transactions (Schumpeter et al, in modern context Kocherlakota (1998), Hull and Sattath (2021), Peneder and Resch (2021))
- Digitisation and advances in computing and cryptography give rise to new forms of this ledger
  - Incentives of whoever updates the ledger matter (ie Auer, Monnet and Shin “Distributed ledgers and the governance of money”)
  - Specific attention on new forms of public money, CBDC
- **Will CBDC transform the nature of the monetary system and the functions of money?**
  - **Today, will take a step back at look at motivations and how these shape the pursued designs**

# With the pandemic, the general acceptance of cash is under threat

Use of cash in retail transactions

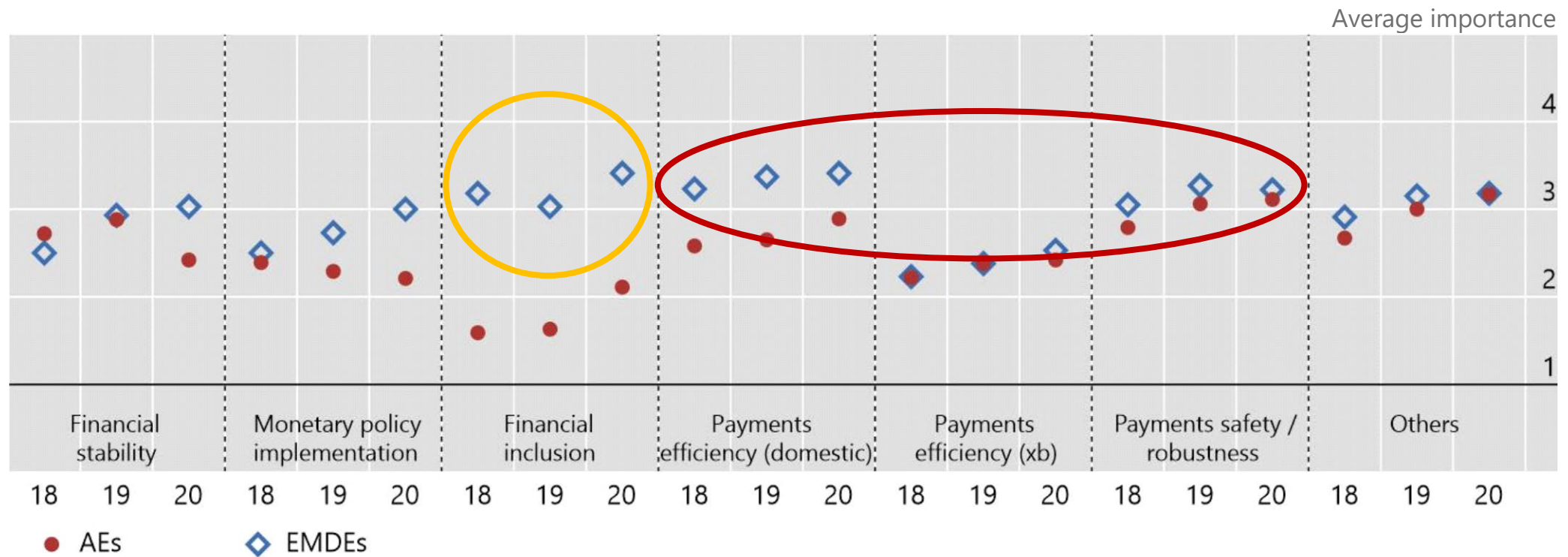


Concerns about viruses and cash<sup>1,2</sup>



Source: Auer R, G Cornelli, J Frost, "[Covid-19, cash, and the future of payments](#)", *BIS Bulletins*, no 3, April 2020; central bank websites, picture: E. Eren

# Motivations for issuing a CBDC: domestic payments robustness & efficiency, and access in EMDEs



(1) = "Not so important"; (2) = "Somewhat important"; (3) = "Important"; (4) = "Very important".

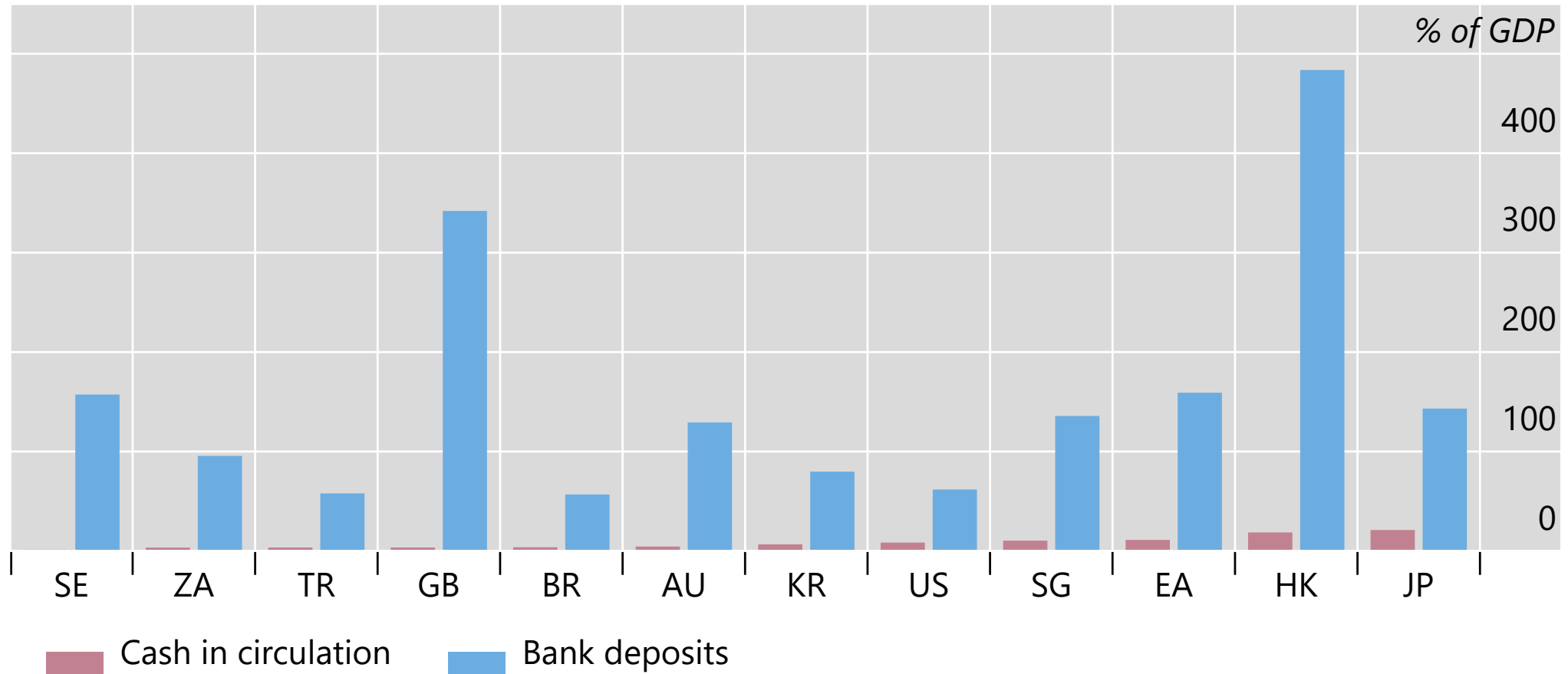
Sources: C Boar and A Wehrli, "Ready, steady, go? – Results of the third BIS survey on central bank digital currency", *BIS Papers*, no 114, January 2021; BIS central bank survey on CBDCs.

Foundational principles

There are three common guiding principles for central banks' consideration of CBDC issuance that flow from their mandates.

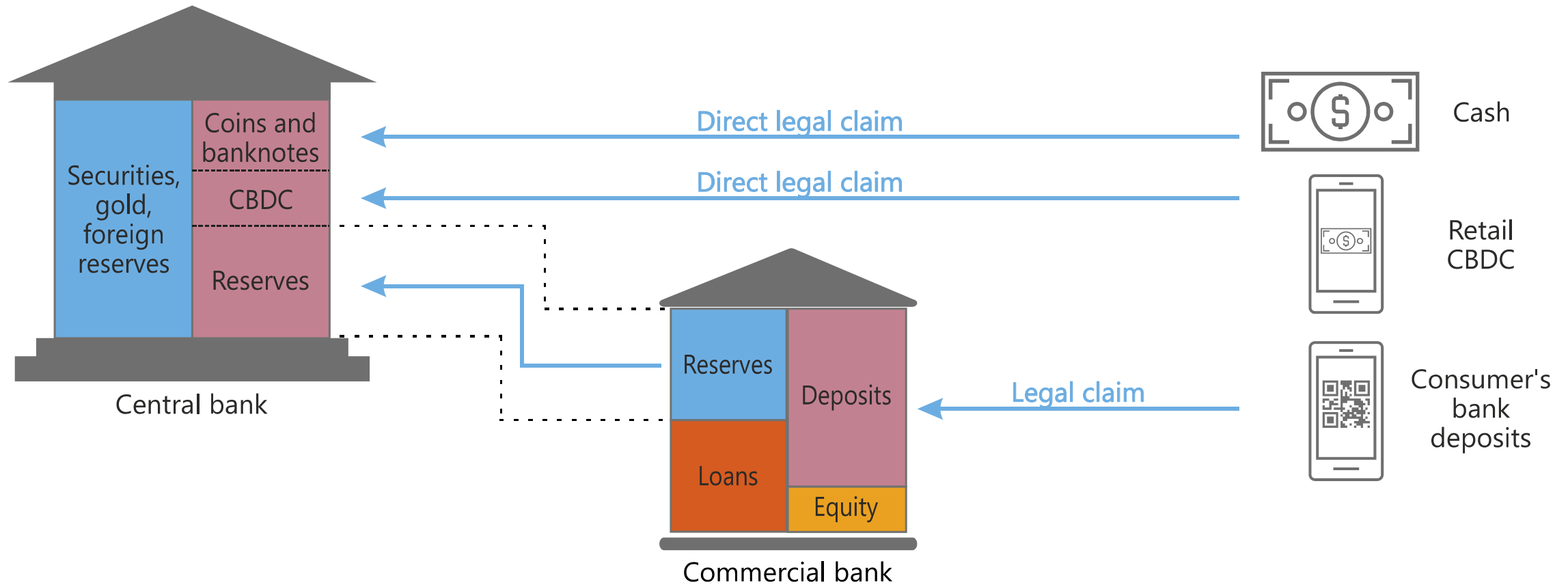
<p>1</p>	<p><b>Do no harm to wider policy objectives</b></p>	<p>New forms of money supplied by the central bank should continue supporting the fulfilment of public policy objectives and should not interfere with or impede a central bank's ability to carry out its mandate for monetary and financial stability.</p>
<p>2</p>	<p><b>Ensure coexistence and complementarity of public and private forms of money</b></p>	<p>Central banks have a mandate for stability and proceed cautiously in new territory. Different types of central bank money – new (CBDC) and existing (banknotes, reserve or settlement accounts) – should complement one another. In addition, they should coexist in a wider payment ecosystem that supports public policy objectives and will include and support robust private money (eg commercial bank accounts).</p>
<p>3</p>	<p><b>Promote innovation and efficiency</b></p>	<p>Without continued innovation and competition to drive efficiency and effectiveness of a jurisdiction's payment system, users may adopt other, less safe instruments or currencies, leading to less reliable payments, economic and consumer harm, and the potential erosion of monetary and financial stability. The payment ecosystem is comprised of public authorities (in particular the central bank) and private agents (eg commercial banks and payment service providers), both of which have roles to play in ensuring a high level of innovation.</p>

## Like with cash, use of a CBDC as store of value can be limited



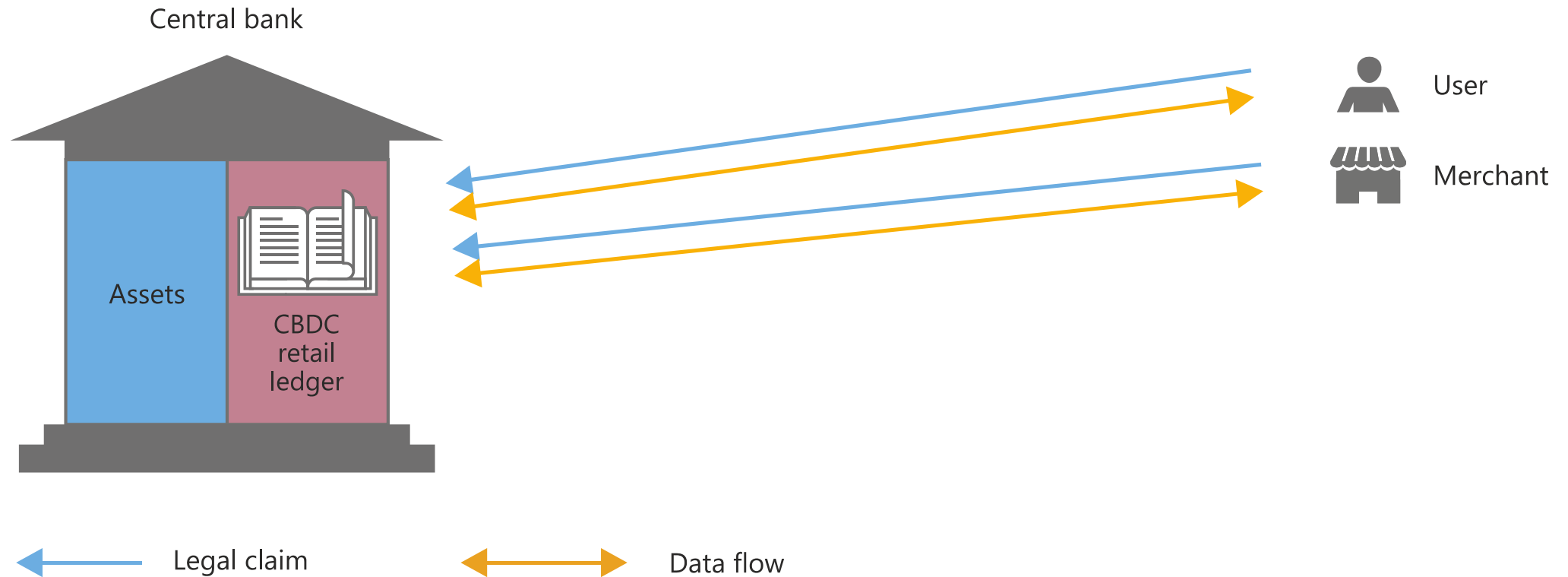
Source: R Auer and R Böhme, "Central bank digital currency: the quest for minimally invasive technology", BIS Working Papers, no 948, June 2021.

# A monetary system with retail CBDC and commercial banks



Source: R Auer and R Böhme, "Central bank digital currency: the quest for minimally invasive technology", *BIS Working Papers*, no 948, June 2021.

# The **Direct CBDC**: central bank-operated payments

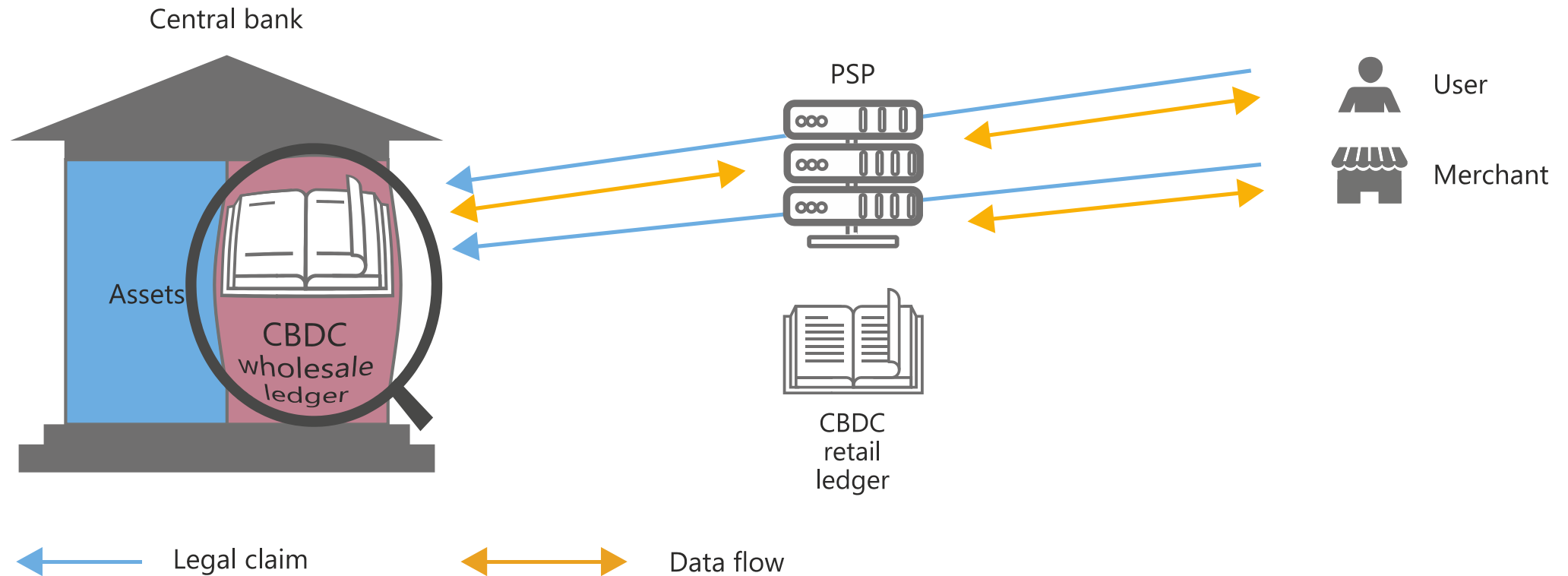


Source: Adapted from R Auer and R Böhme, "Central bank digital currency: the quest for minimally invasive technology", *BIS Working Papers*, no 948, June 2021.



# Two-tier CBDC without a backup: fully **Intermediated CBDC**

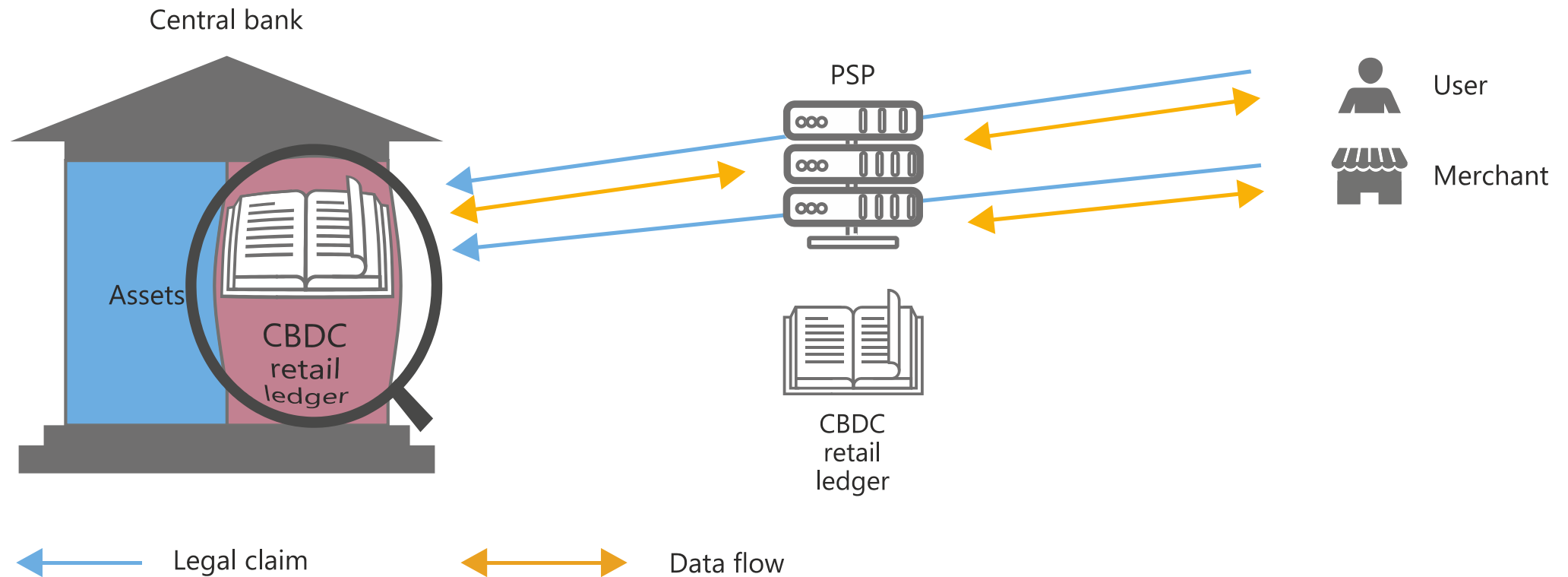
## Central bank records wholesale balances



Source: Adapted from R Auer and R Böhme, "Central bank digital currency: the quest for minimally invasive technology", *BIS Working Papers*, no 948, June 2021.

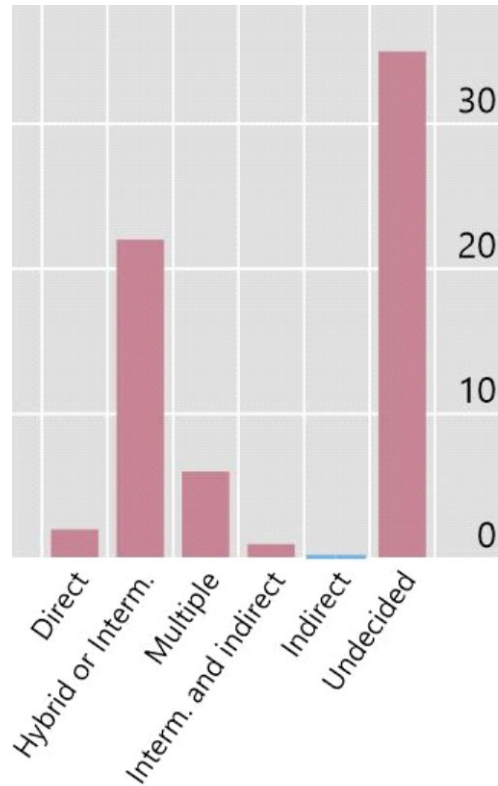
# Hybrid CBDC - a central bank backup

## Central bank records retail balances



Source: Adapted from R Auer and R Böhme, "Central bank digital currency: the quest for minimally invasive technology", *BIS Working Papers*, no 948, June 2021.

## Attributes of retail CBDC projects... – stock take as of Jan 6, 2022



- From Auer, Cornelli and Frost (2020) *“Rise of the central bank digital currencies: drivers, approaches and technologies”* BIS Working Papers No 880, 24 August
- UPDATED DATA can be found here: <https://www.bis.org/publ/work880.htm>

Source: R Auer, G Cornelli and J Frost (2020), *“Rise of the central bank digital currencies: drivers, approaches and technologies”*, *BIS working papers*, No 880, August.

## Conclusion

- Despite heterogeneity in approaches and designs across countries, CBDCs aimed at
  - Means of exchange rather than store of value
  - Coexistence: complement cash, bank deposits (Group of central banks (2020))
  - Important role for the private sector, also in maintaining the ledger
- **Given limited systemic impact and impact on information structure, how likely is it to transform the nature of money and unbundle its functions?**
  - Still may affect the competition and privacy nexus:
    - **BIS (2021) “CBDCs: an opportunity for the monetary system”, Annual Economic Report, Chapter III, June**