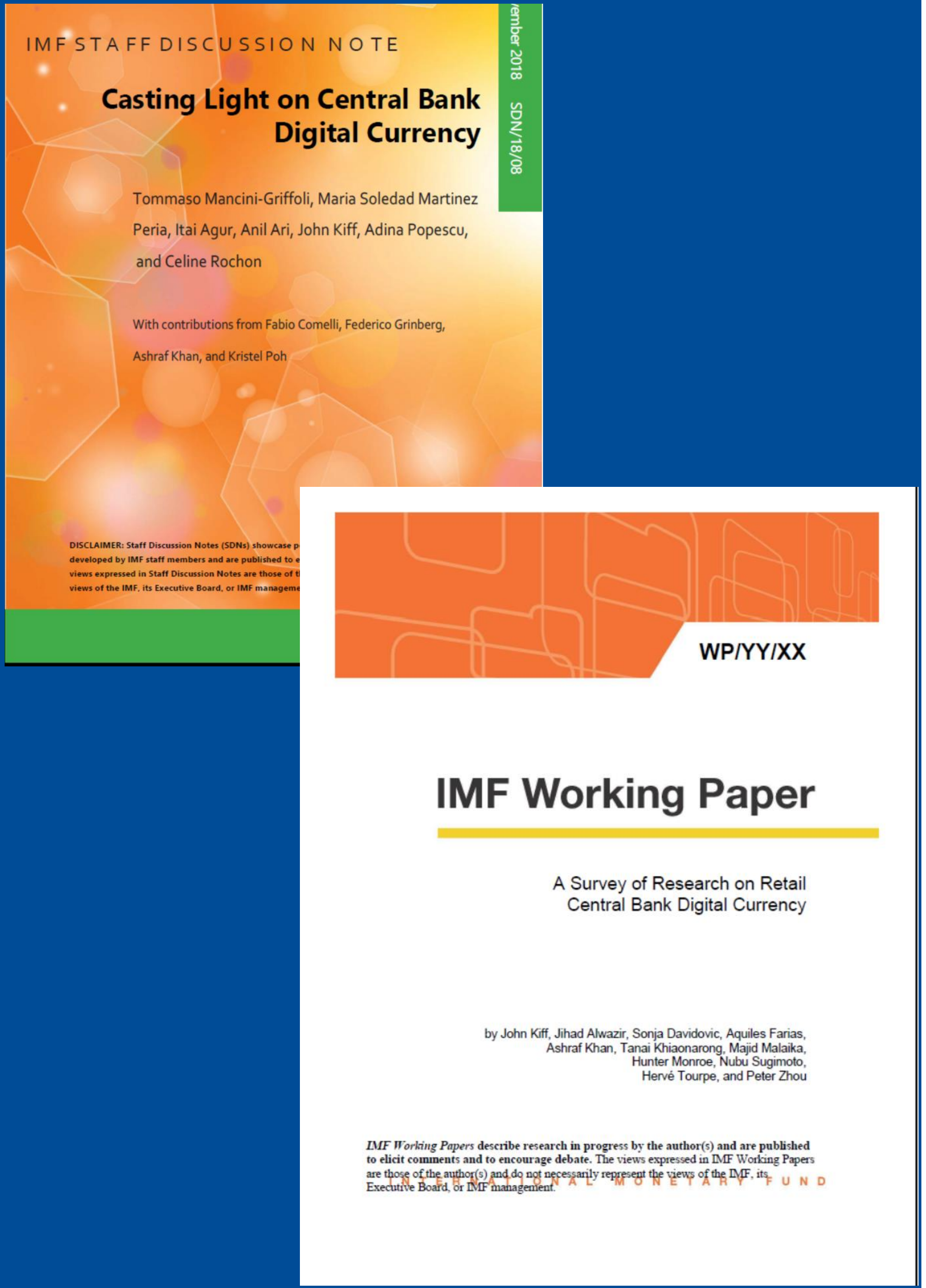
IMF STAFF DISCUSSION NOTE

Casting Light on Central Bank Digital Currency

Tommaso Mancini-Griffoli, Maria Soledad Martinez Peria, Itai Agur, Anil Ari, John Kiff, Adina Popescu, and Celine Rochon

With contributions from Fabio Comelli, Federico Grinberg, Ashraf Khan, and Kristel Poh

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IMF Working Paper

A Survey of Research on Retail Central Bank Digital Currency

by John Kiff, Jihad Alwazir, Sonja Davidovic, Aquiles Farias, Ashraf Khan, Tanai Khiaonarong, Majid Malaika, Hunter Monroe, Nubu Sugimoto, Hervé Tourpe, and Peter Zhou

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INTERNATIONAL MONETARY FUND

Retail Central Bank Digital Currency

Whats, Wheres, Whys and Wherfores

JUNE 26, 2020

John Kiff

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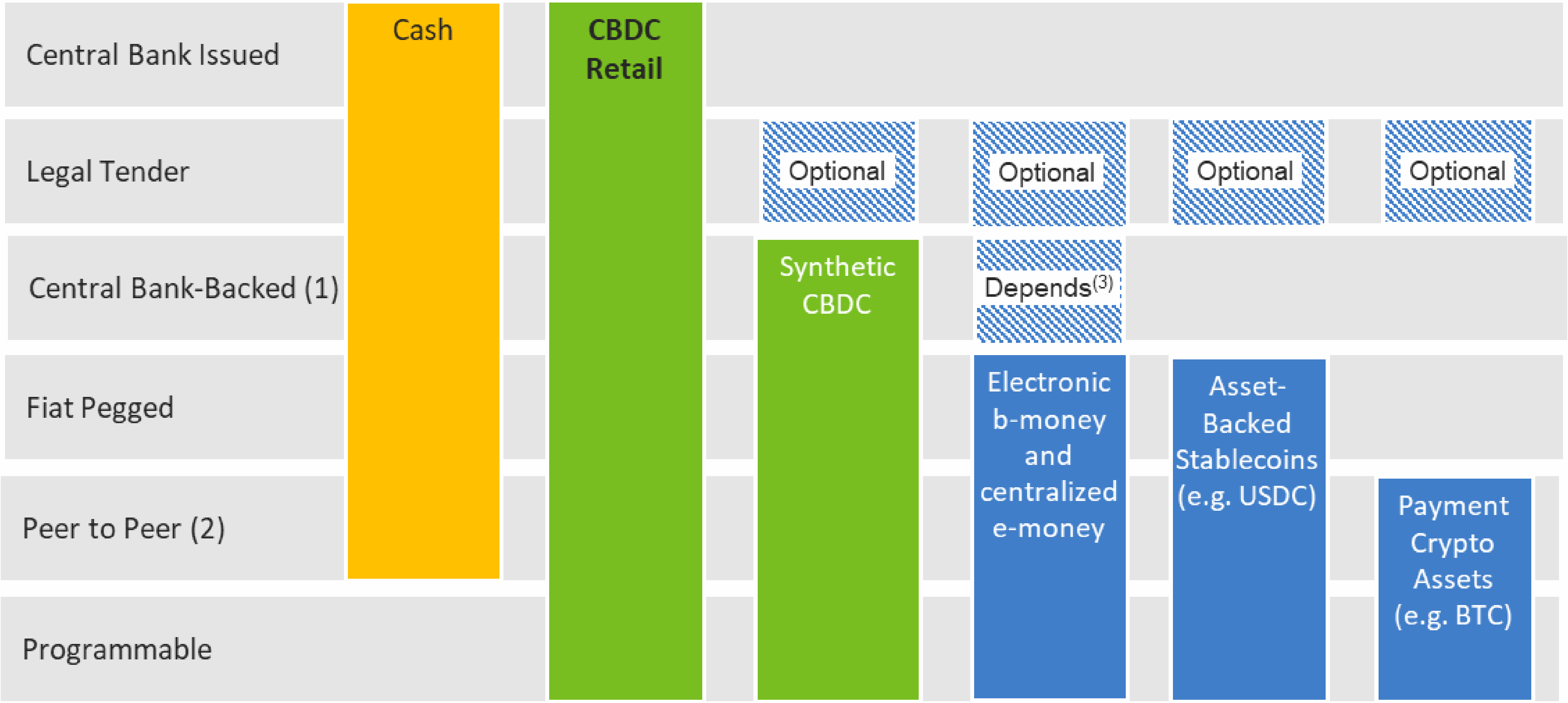
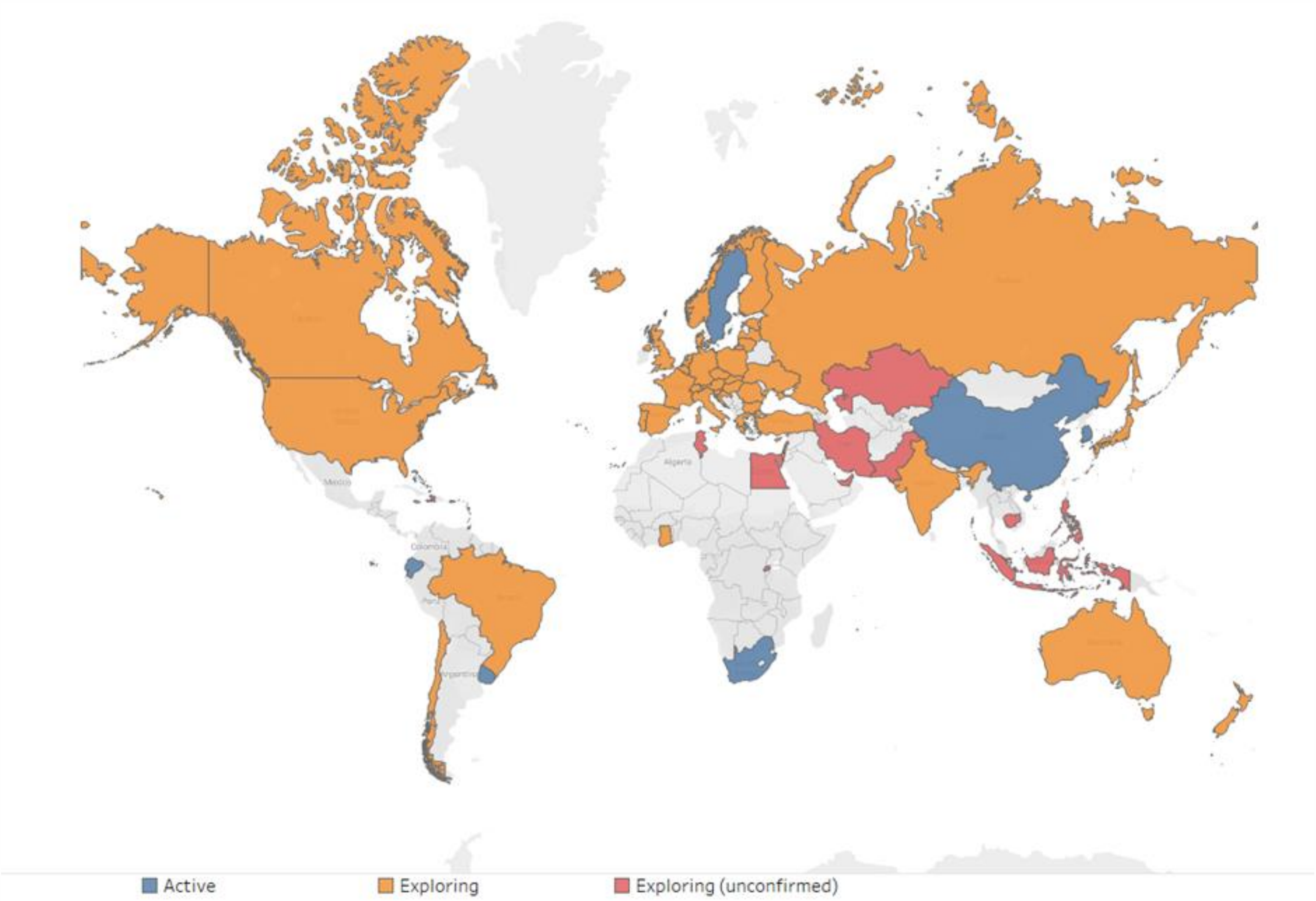
A Money Matrix (An Alternative to the BIS “Flower”)



(1) Backed by deposits at the central bank
(2) Person to person, bank to bank, merchant to merchant, person to merchant etc.
(3) B-money is typically fractionally backed by central bank reserves, whereas centralized e-money may or may not be. For example, Kenya’s M-Pesa is not, but China’s AliPay and WeChat Pay are fully central bank-backed.

Current and Past CBDC Projects (as of June 2020)



Motivations for Issuing CBDC

- Enhancing payment system competition, efficiency and resilience in the face of increasing concentration in the hands of few very large companies.
- Supporting financial digitization, reducing costs associated with physical cash, and improving financial inclusion.
- Improving monetary policy effectiveness to implement targeted policy, or tap more granular payment data to enhance macroeconomic projections.
- Enhancing monetary policy transmission with interest-bearing CBDC. Breaking the policy rate zero lower bound (if extent cash is made costly).
- Reducing or preventing the adoption of privately issued currencies, which may threaten monetary sovereignty and financial stability,
- Improving traction of local currency as means of payments in jurisdictions attempting to reduce dollarization.
- Distributing fiscal stimulus to unbanked and other recipients.

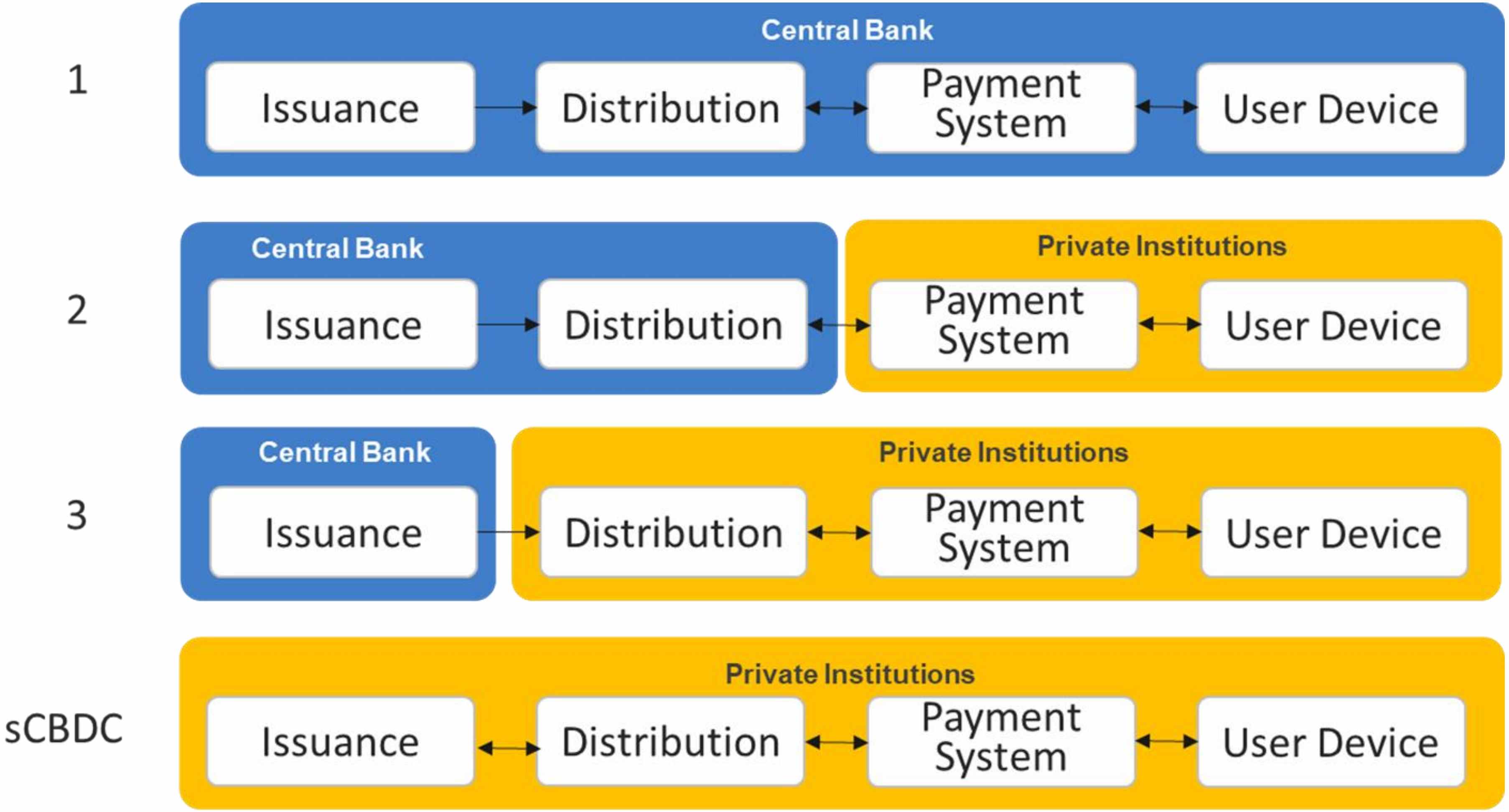
Risks of Issuing CBDC

- CBDC could affect the transmission of monetary policy
- CBDC could affect financial stability and banking intermediation if it competes with bank deposits.
  - Banks could also increase their reliance on wholesale funding, with implications for funding cost and stability, and market discipline.
  - Several suggestions have been put forward to control potential banking sector disintermediation, including holding/transaction limits, and restricted conversion modalities.
- CBDC may increase bank run risk by offering a readily available, safe, and liquid alternative to deposits, depending on the CBDC's design.
- CBDC of reserve currency countries available across borders could increase currency substitution ("dollarization").

Key Design Principles/Questions

- **Single- versus multi-tier** versus synthetic CBDC operating model?
- **Centralized versus decentralized** ledger maintenance authority?
- Anonymity and **privacy versus financial integrity** standards compliance?
- **Availability and limitations**, offline access, cross-border usage, convertibility?
- **Interest bearing** (positive and negative) to modulate demand?
- Embed smart contracts and programmability?
- **Design principles are independent of a specific technology choice.**
- **Design flexibility to account for changes or evolution in technology, use cases or policy objectives, regulation, and interoperability**

Operating Models from Single- to Multi-Tier



Source: Roberto Giori Company

Legal, Regulatory and Governance Considerations

- For a successful launch, the CBDC needs to fall under the country's existing legislative/regulatory frameworks, and legal tender definitions.
- Central banks need to consider governance, internal organization, and risk management when examining the pros and cons of issuing a CBDC
- Central bank's Board and operational-level staff need to have a clear understanding of key risks.
- Outsourcing some of the key activities still requires that bank staff have the skills and expertise to make appropriate risk assessments.
- IT operational resilience and security posture needs to be reviewed and strengthened around CBDC design, components and ecosystem.

Questions?

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