# Central Bank Digital Currency Landscape

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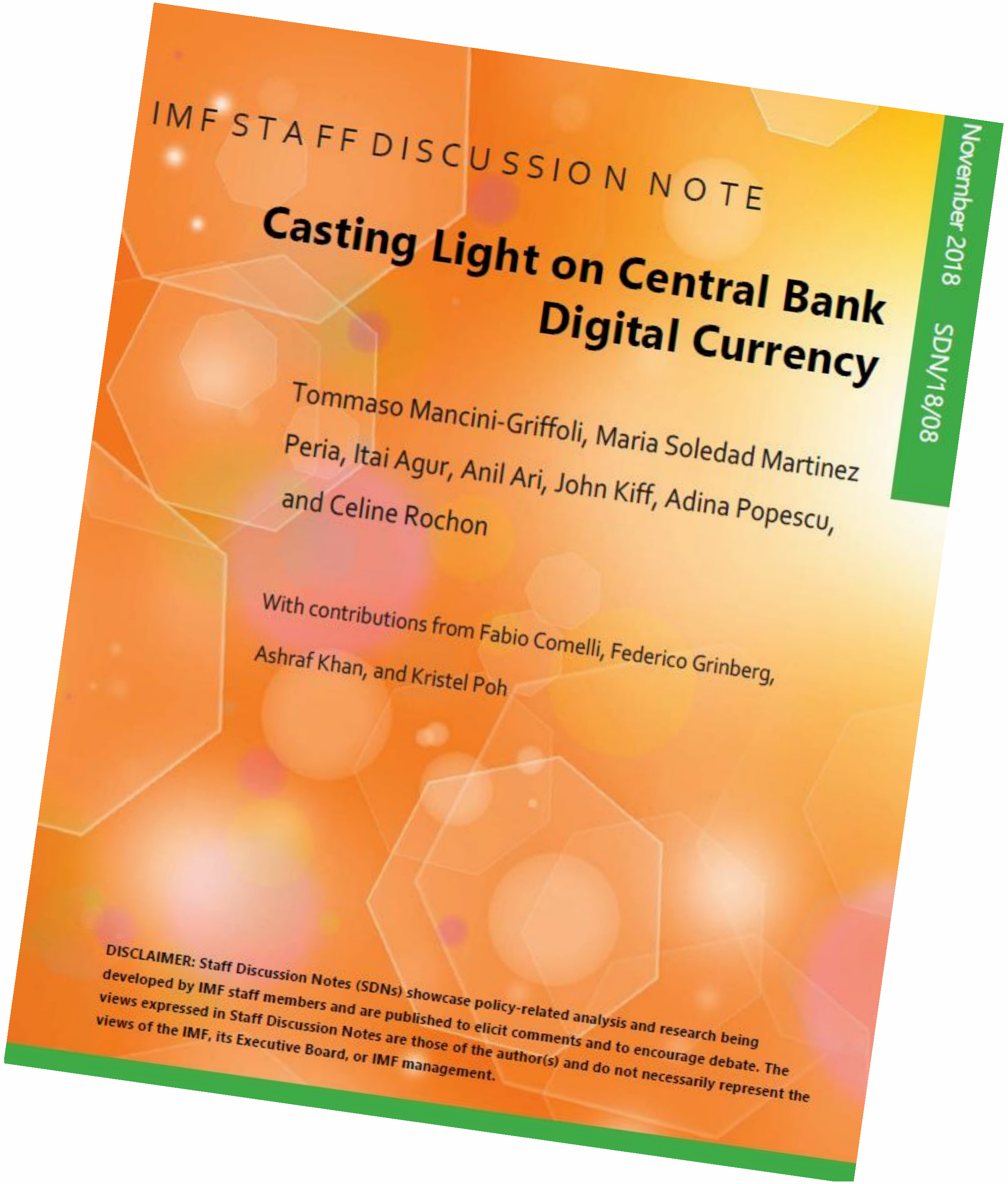

IMF STAFF DISCUSSION NOTE

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# Casting Light on Central Bank Digital Currency

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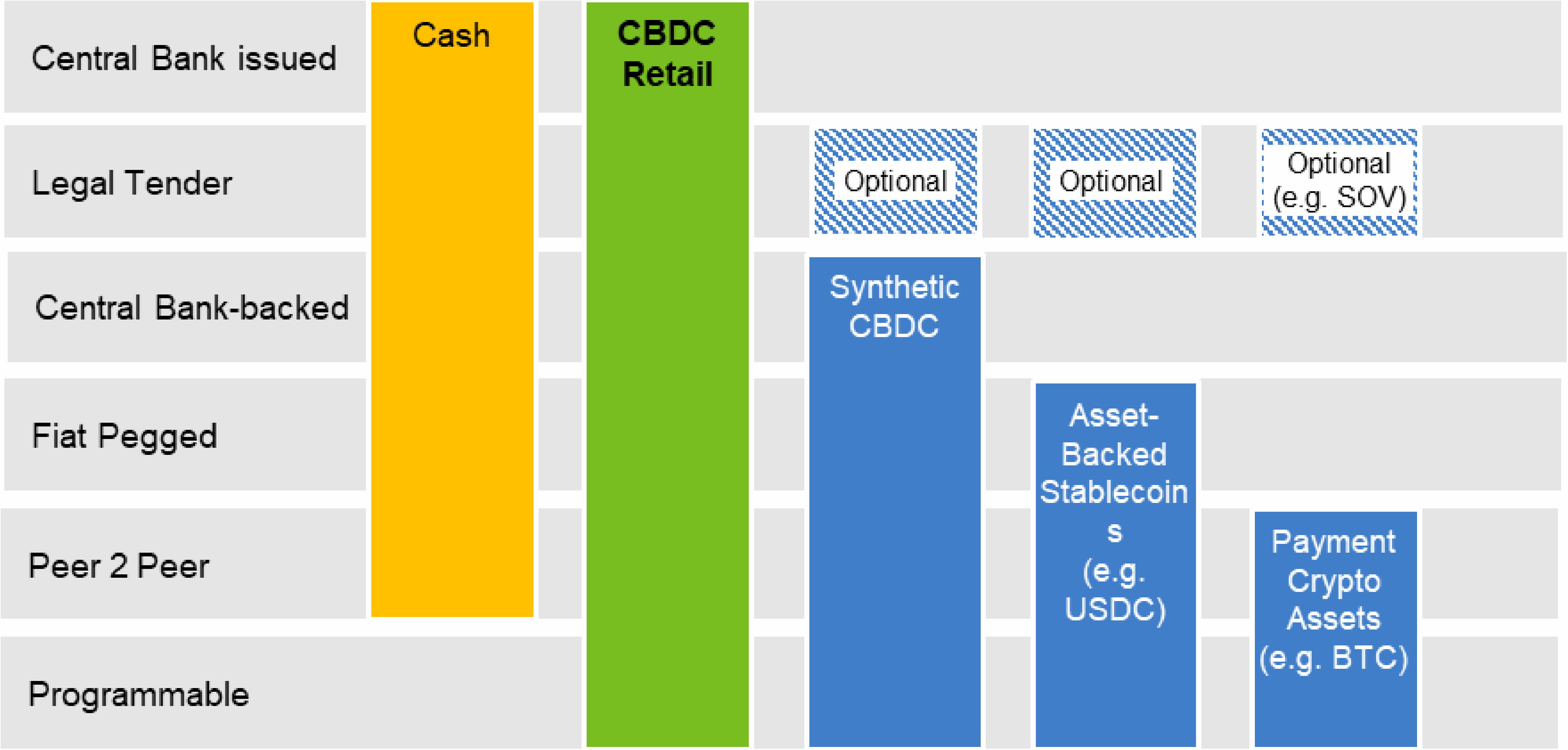
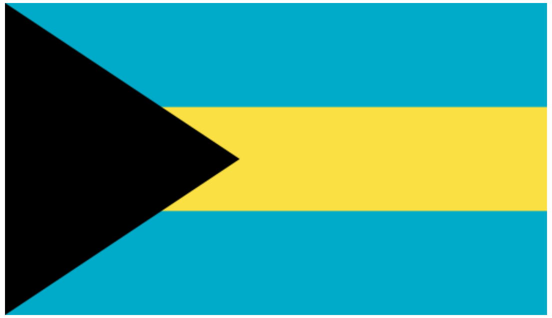
# A Money Matrix (An Alternative to the BIS "Flower")



# Central Banks Are Exploring Digital Currencies




- Diminishing cash usage
- Monopoly distortions




- Financial inclusion
- Cost efficiency vs cash

| Countries Where Retail CBDCs Are Being Explored (34+4?) | |
|---|---|
| Australia (on hold) | Jamaica |
| Bahamas | *Korea* (and *rejected*) |
| *Bahrain* | Lebanon |
| Canada | New Zealand (on hold) |
| China | Norway (ongoing) |
| Curaçao en Sint Maarten | *Palestine* |
| Denmark (rejected) | Philippines |
| Eastern Caribbean | *Russia* |
| Ecuador (pilot complete) | South Africa |
| *Egypt* | Sweden |
| European Area (and rejected) | *Switzerland* |
| Hong Kong | Trinidad and Tobago (rejected) |
| Iceland (rejected) | *Tunisia* |
| India | Ukraine |
| *Indonesia* | United Arab Emirates |
| *Iran* | United Kingdom |
| Israel (rejected) | Uruguay (pilot complete) |

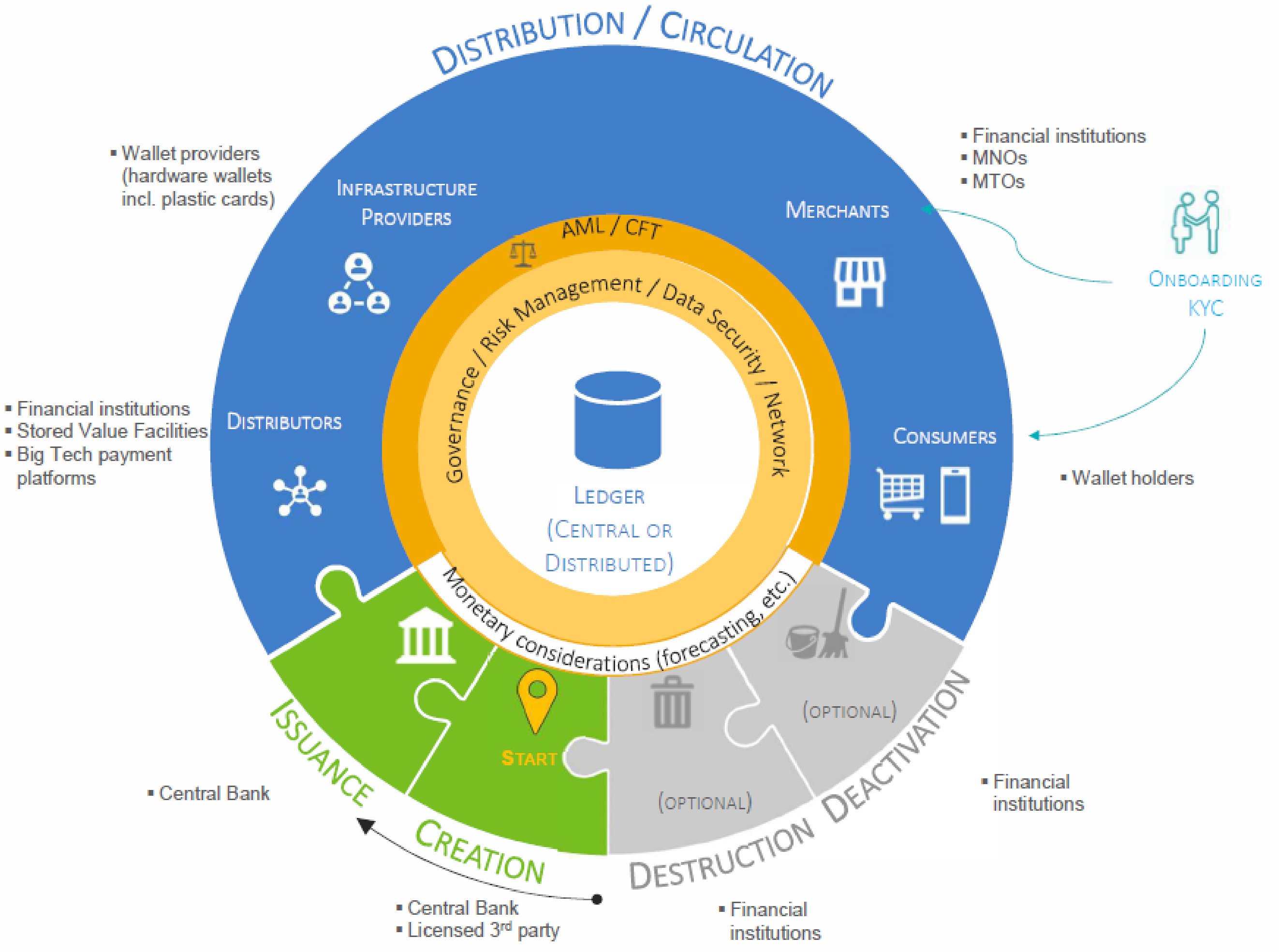
# There is no Universal Case for CBDC

- In advanced economies, there may be scope for the adoption of CBDC as a potential replacement for cash for small-value, pseudo-anonymous transactions.
- In countries with limited banking sector penetration and inefficient settlement technology, demand for CBDC may well be greater.
- CBDC **may** reduce costs and operational risks associated with the use of cash.
- CBDC may improve financial inclusion in cases of unsuccessful private sector solutions and policy efforts, and geographic dispersion and remoteness.
- CBDC could bolster the security of, and trust in, the payment system and protect consumers where regulation does not adequately contain private monopolies.
- But regulation and, where possible, synthetic CBDC and fast payment solutions could offer compelling alternatives to a CBDC.

# CBDC Cost and Operational Efficiency: No Free Lunch

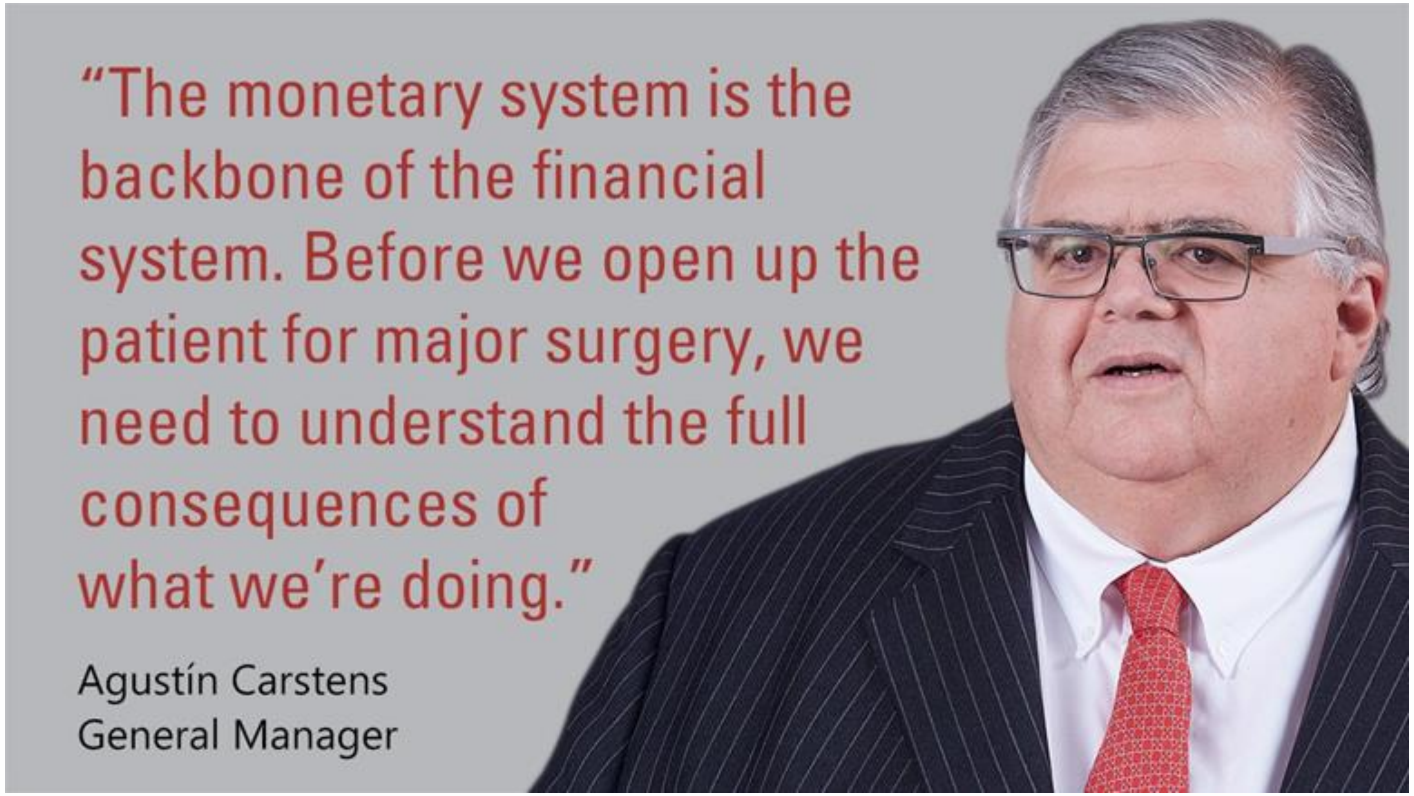
## Cash Currency – Transfer of Possession


## CBDC – Transfer of Possession



# CBDC Could Impact Monetary Policy Transmission and Interfere with Commercial Bank Intermediation

Aside from the run risk, the BIS warns that CBDC could impact monetary policy implementation by changing the demand for base money and its composition in unpredictable ways, and possibly modifying the sensitivity of the demand for money to changes in interest rates. Also, CBDC could lead to a larger central bank balance sheet, which may require it to purchase additional assets, which could interfere with key markets functioning or dry up liquidity.



# But Design and Policies Should Help Mitigate These Risks

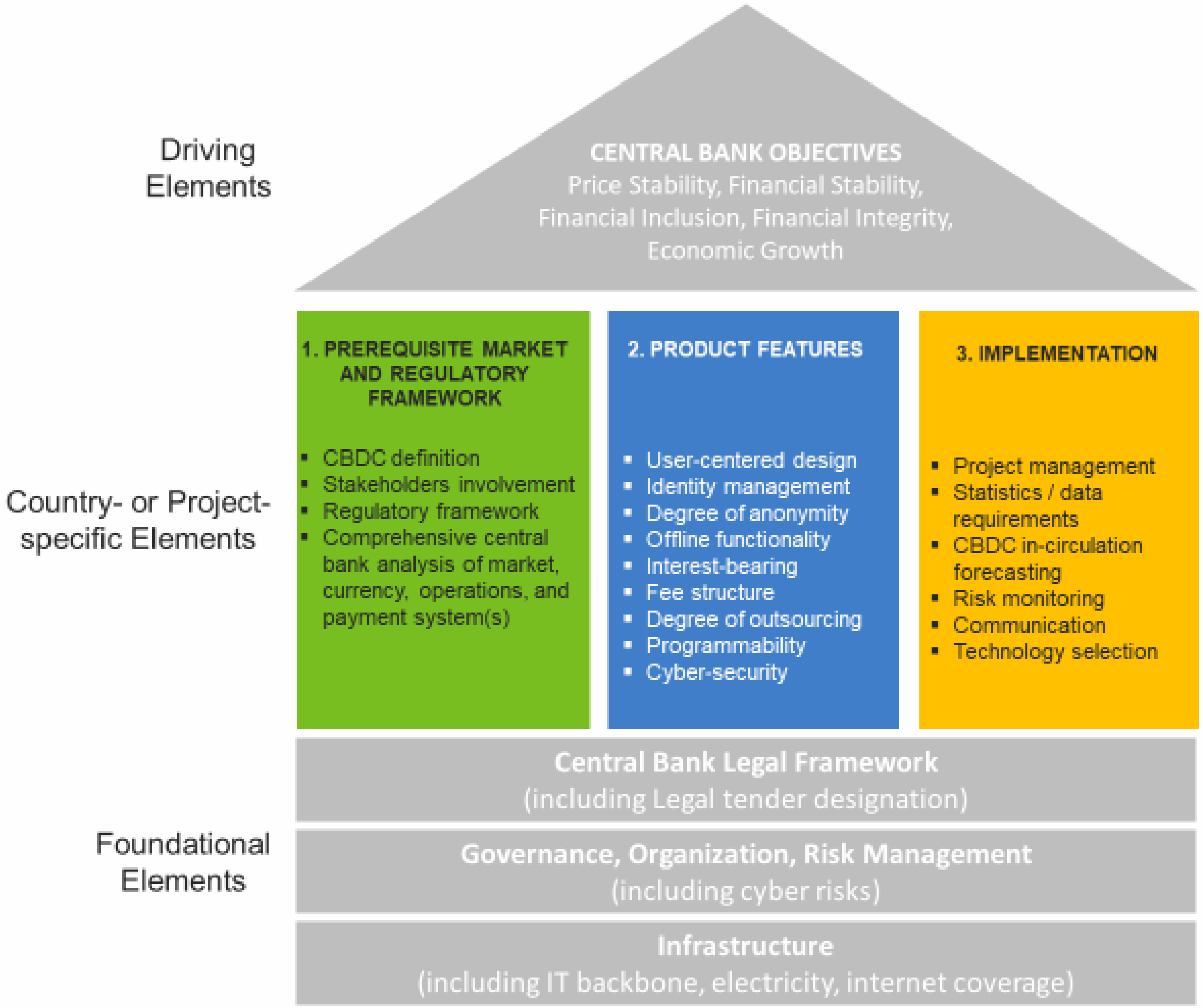
- Monetary policy transmission is unlikely to be significantly affected and may benefit.
  - The interest-rate channel could strengthen if CBDC increases financial inclusion and exposes more households and firms to interest-sensitive instruments.
  - The bank lending channel could also strengthen if banks rely on wholesale funding.
  - the credit and exchange rate channels are unlikely to be much affected.
- Although CBDC could increase funding costs for deposit-taking institutions and intensify run risk in some jurisdictions, design choices can help ease such concerns.
  - Limits on holdings and fees to convert to CBDC; recycling deposits back to the banking system; outsource CBDC management (e.g., wallets) to banks.
  - Deposit insurance may mitigate run risk, plus CBDC could allow the central bank to offer liquidity faster to avoid the first-come-first-serve dynamics that fuels runs.
- Although it will not eliminate illicit activity, CBDC may in some situations enhance financial integrity. However, it also entails risks for financial integrity if badly designed.

# CBDC Design and Financial Integrity and Privacy

| CBDC can protect privacy without undermining integrity if… | CBDC can undermine integrity if … |
| --- | --- |
| Transaction sizes are limited<br><br>If there is appropriate customer due diligence in place & transactions recorded<br><br>Identity revealed only if illicit activity suspected | Full anonymity and large-value transactions allowed [or if strong AML/CFT measures are not implemented] |

# Design Features Could Exploit Digital Capabilities

- **A CBDC could pay interest to incentivize its adoption**
  - An interest-bearing CBDC would eliminate the effective lower bound on interest-rate policy, but only with constraints on cash usage.
  - Paying interest would bring operational challenges to interest calculation and have an adverse impact on the anonymity due to tax reporting requirements.
- **Transaction fees** could supplement financial control and prevent overload or misuse of the system. Could vary depending on transaction types/volumes
- **Digital currencies could unlock use cases that were previously impractical**.
  - Digital identity can be associated with specific usage. For example, age restrictions could prevent using digital currency to buy certain goods.
  - Assuming privacy and security are addressed, other personal data can in theory be leveraged to implement monetary or fiscal policies.


Driving Elements
CENTRAL BANK OBJECTIVES
Price Stability, Financial Stability, Financial Inclusion, Financial Integrity, Economic Growth
Country- or Project-specific Elements
1. PREREQUISITE MARKET AND REGULATORY FRAMEWORK
▪ CBDC definition
▪ Stakeholders involvement
▪ Regulatory framework
▪ Comprehensive central bank analysis of market, currency, operations, and payment system(s)
2. PRODUCT FEATURES
▪ User-centered design
▪ Identity management
▪ Degree of anonymity
▪ Offline functionality
▪ Interest-bearing
▪ Fee structure
▪ Degree of outsourcing
▪ Programmability
▪ Cyber-security
3. IMPLEMENTATION
▪ Project management
▪ Statistics / data requirements
▪ CBDC in-circulation forecasting
▪ Risk monitoring
▪ Communication
▪ Technology selection
Foundational Elements
Central Bank Legal Framework
(including Legal tender designation)
Governance, Organization, Risk Management
(including cyber risks)
Infrastructure
(including IT backbone, electricity, internet coverage)

# “The case for digital currency is not universal, we should investigate CBDC further, seriously, carefully, and creatively!”

“I believe we should consider the possibility to issue digital currency. This currency could satisfy public policy goals, such as (i) financial inclusion, and (ii) security and consumer protection; and to provide what the private sector cannot: (iii) privacy in payments. [But] the case for digital currency is not universal, we should investigate it further, seriously, carefully, and creatively.”

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