

# Improving Cooperation among Central Banks in terms of Digital Currencies: Challenges and Prospects for OIC Member Countries



Standing Committee  
for Economic and Commercial Cooperation  
of the Organization of Islamic Cooperation (COMCEC)



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May 2023

# Part I - Introduction

- A taxonomy of money based on i) the technical form of money and ii) the issuer in three folds
  - First-tier: central Bank Money including the central bank digital currencies (CBDCs)
  - Second-tier: liquid bank money as well as deactivated bank money (based on central bank money)
  - Third-tier: money market fund shares (MMFs), e-money, stablecoins and other currencies
- ***MMFs, e-monies*** and ***stablecoins*** transformed the two-tier monetary system into a three-tier system



# Introduction

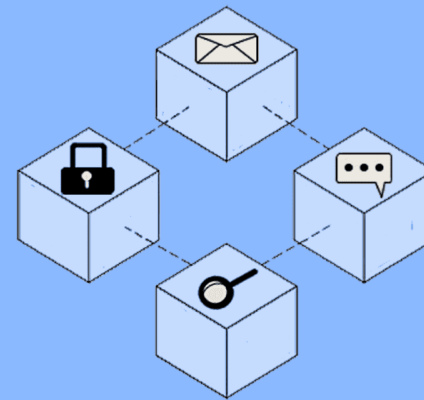
- Cryptocurrencies and stablecoins led central banks' authority being questioned
- Wide range of discussions among technocrats, policy makers, regulators and market players
- Financial technologies such as blockchain triggered a new race for digital innovation in finance and other industries



## Stablecoin

*['stā-bəl-'koin]*

A cryptocurrency which has a value that is pegged, or tied, to that of another currency, commodity or financial instrument.



## Blockchain

*['blāk-,chān]*

A digital database or ledger that is distributed among the nodes of a peer-to-peer network.



# Background

- Monetary system evolves into its fourth transformation period
  - ***sovereign coin in decline and unregulated paper money on the rise*** (between late 17<sup>th</sup> century and 1840s)
  - ***emergence of the central bank regulated monetary system*** (from 1840s until early 20<sup>th</sup> century)
  - ***rise of the bank money against the central bank notes and reserves*** (throughout 20th century)
  - ***rise of digital currencies (DCs) and CBDCs*** (aftermath of the 2008 financial crisis-catalyzed by the 2019 Coronavirus pandemic)



## Central Bank

*[ˈsen-trəl ˈbæŋk]*

A financial institution given privileged control over the production and distribution of money and credit for a nation or a group of nations.

# Background

- CBDCs as alternative to the decentralized finance and its instruments
- CBDCs among the Organization of Islamic Countries (OIC) members
  - potential benefits and challenges
- CBDC experiences of the selected OIC countries
  - technological breakthrough and potential driving force of financial innovation
  - interoperability questions
  - regulatory and legal issues

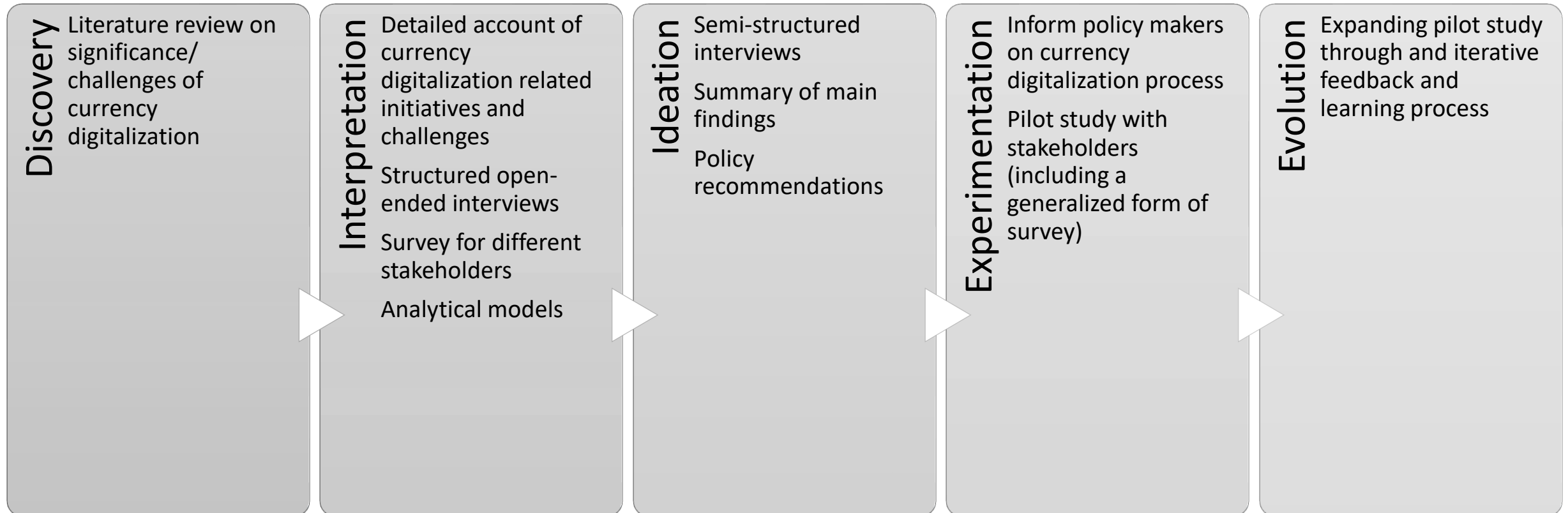


# Aim and Scope of the Study

- Main objective is to analyze
  - digital currencies
  - current initiatives in different jurisdictions on CBDCs (OIC member countries)
  - roles of responsible institutions to introduce and regulate DCs
  - the challenges and prospects of digital currencies for OIC member countries
- Presented to the COMCEC Financial Working Group as the study
  - policy recommendations to improve cooperation among central banks of OIC members in DCs
  - in-depth analysis of challenges and prospects
  - policy conclusions particularly from the lessons learned in select countries

# Methodology

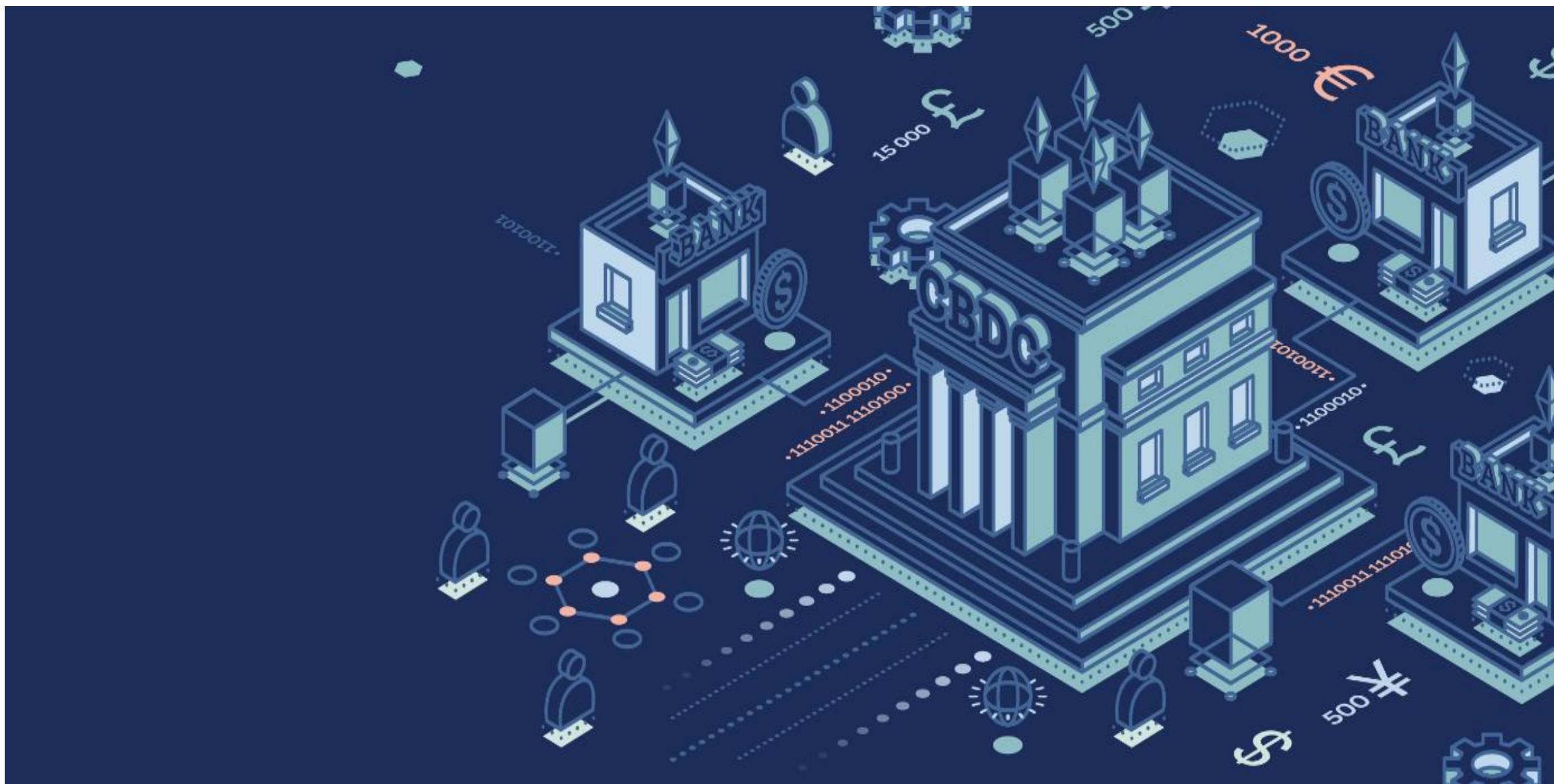
- Five defined phases of design thinking – *discovery, interpretation, ideation, experimentation, and evolution*



# Methodology

- Main tools of research:
  - literature review:
    - literature on CBDCs
    - analyze information from related documentation
  - survey and interview(s):
    - online structured survey and expert interviews
    - collect data from the stakeholders
  - case studies (field work and/or desk research):
    - structural, regulatory, and technical opportunities/challenges that foster/hinder
    - currency digitalization and cooperation among central banks at the local and OIC level
  - data analysis (DEMATEL and other):
    - multi-criteria decision-making models
    - see which criteria are more critical to improve digital currency implementation
    - identify the causal relationship between these factors





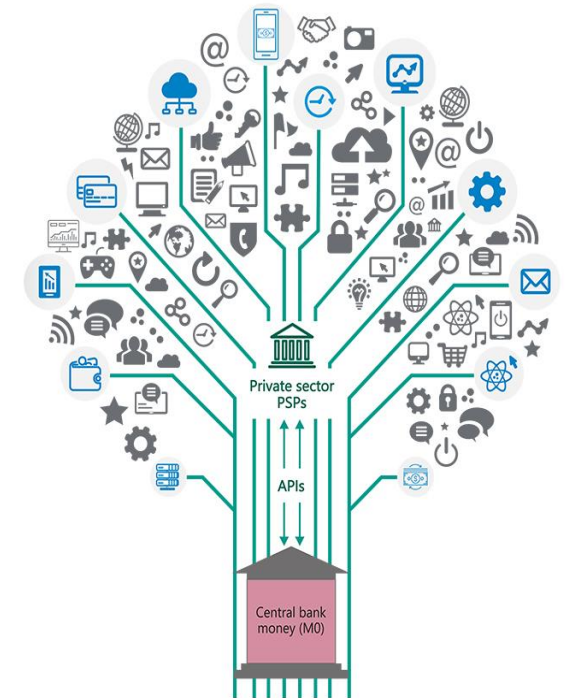
# Part II – Digitalization of Currencies

- Attempts to create digital money and online payment systems in the 1990s
- A decentralized digital currency (Bitcoin) with blockchain technology in 2009
- Despite regulatory and security challenges, digital currencies gain popularity and recognition
- Digital currencies evolved and expanded with # of cryptocurrencies and CBDCs



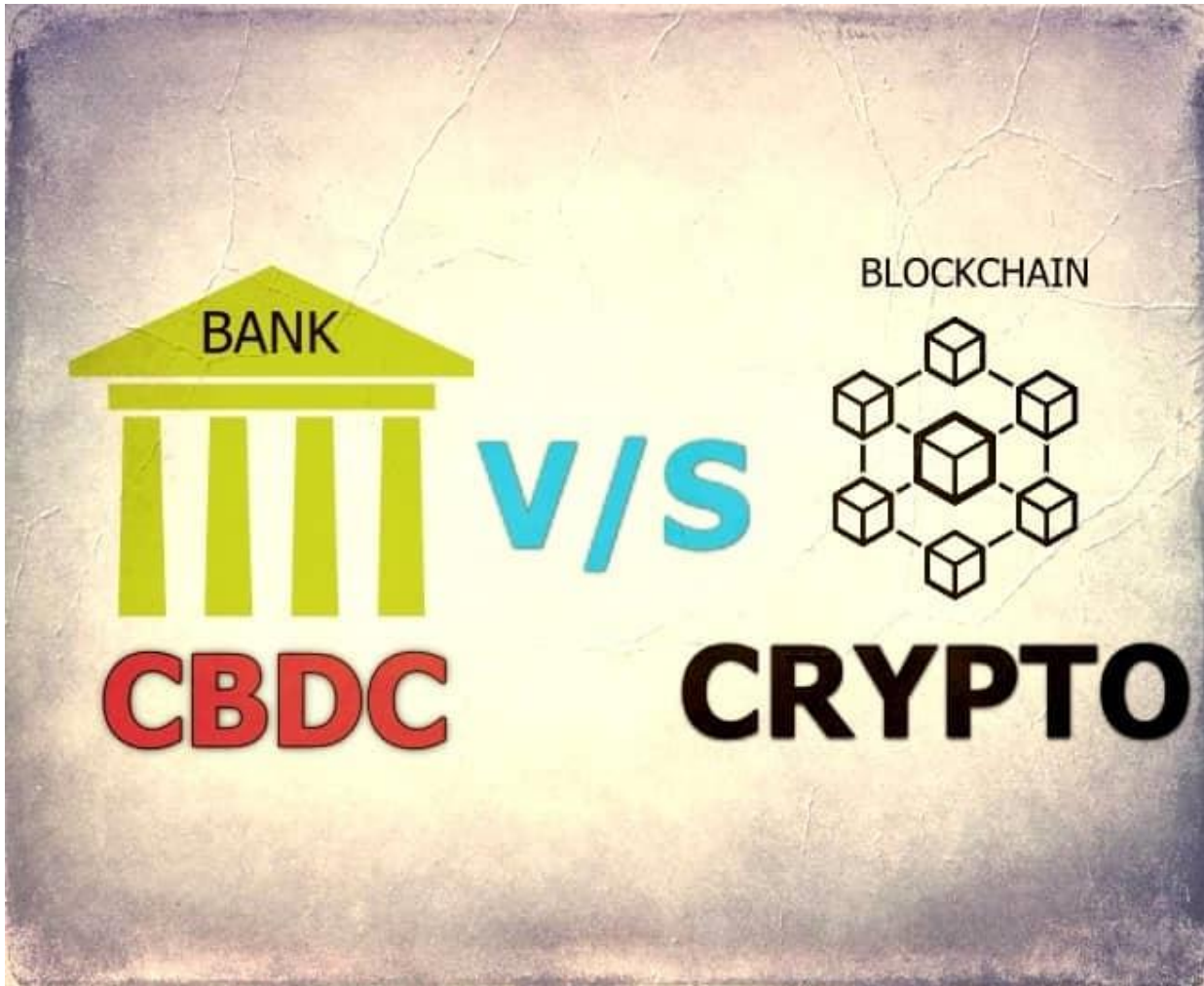
# The Nature of Digital Currencies

- Roles of DCs in financial and monetary system
  - alternative to traditional fiat currencies
    - decentralized and digital
  - facilitate cross-border transactions
    - faster and efficient transfer of funds in cross-border transactions
  - improve financial accessibility
    - Access to financial services to individuals and businesses
  - increase financial privacy
    - increased privacy for users
    - transactions without revealing personal information
  - enable decentralized applications
    - backbone of decentralized applications and platforms
    - new forms of online interactions and transactions





# The Nature of Digital Currencies



- role of DCs vary
  - serve as a medium of exchange
  - a unit of account and a store of value
- in decentralized or centralized form (cryptocurrencies vs. CBDCs)
  - efficient, secure, and accessible alternative to fiat currencies
- implications for financial inclusion, privacy, and monetary policy



# Cryptocurrencies vs. CBDCs

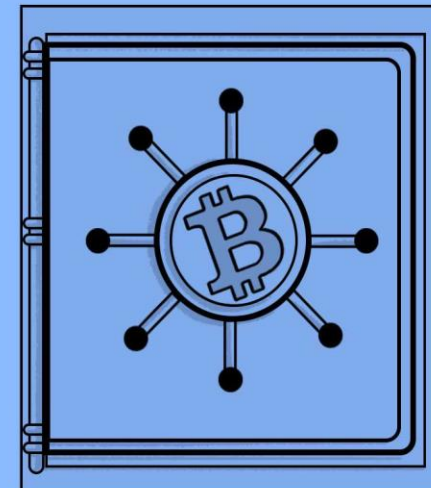
- Three types of DCs: cryptocurrencies, central bank digital currencies (CBDCs), and hybrid digital currencies
- **Cryptocurrencies:** decentralized digital currencies that use cryptography to secure transactions and control the creation of new units.
  - not issued or backed by a government or central authority
  - designed to be borderless and censorship-resistant (i.e., Bitcoin, Ethereum, and Litecoin)
- **CBDCs:** digital currencies issued and backed by a central bank or government
  - a digital version of a country's fiat currency
  - offer greater financial inclusion, faster and cheaper payment systems, and enhanced monetary policy tools.
  - retail for the general public or wholesale only for the financial institutions
- **Main difference between cryptocurrencies and CBDCs lies in their decentralization and the backing of a central authority**
- Hybrid digital currencies with elements of both cryptocurrencies and CBDCs incorporating benefits of both types of currencies



## Cryptocurrency

[krip-tō-'kər-ən(t)-sē]

A digital or virtual currency secured by cryptography and based on a network that is distributed across a large number of computers.



## Central Bank Digital Currency (CBDC)

[sen-trəl 'bāŋk 'di-jə-tol 'kər-ən(t)-sē]

Digital tokens, similar to cryptocurrency, issued by a central bank.

# Regulating Digital Currencies and the CBDCs

- Advantages of the DCs
  - **Efficiency**: faster and lower transactions cost
  - **Accessibility**: financial inclusion
  - **Security**: secure transactions (cryptography)
  - **Decentralization**: no single authority / control
  - **Transparency**: transparency and traceability in transactions (public ledger)
  - **Global reach**: cross-border transactions without need for currency exchange
  - **Programmability**: programmable features for the development of new financial products and services



# Regulating Digital Currencies and the CBDCs

- Disadvantages and challenges of the DCs
  - **Volatility**: high price volatility, unreliable as a store of value
  - **Regulation**: lack of clear regulatory framework, uncertainty and limits over adoption
  - **Cybersecurity Risks**: hacking and other types of cyber-attacks / user funds at risk
  - **Limited Acceptance**: limited acceptance as a means of payment, low functionality
  - **Complexity**: difficult to understand and use if not familiar with technology
  - **Energy consumption**: production and maintenance, require a large amount of energy, environmental concerns
  - **Lack of Consumer Protection**: no government guarantees or insurance programs / users responsible for protecting their own funds
  - **Price manipulation**: vulnerable to price manipulation by large market participants (smaller cryptocurrencies more)

# Regulating Digital Currencies and the CBDCs

- CBDCs offer several advantages
  - **Increased financial inclusion:** access to financial services for individuals and businesses
  - **Improved payment efficiency:** faster and cheaper payment services
  - **Enhanced monetary policy tools:** central banks with new tools of monetary policy (i.e., negative interest rates and direct targeting of individuals or businesses)
  - **Increased financial stability:** reduced risk of bank runs and financial instability via secure and stable means of payment
  - **Improved security:** advanced technology and cryptography, enhanced security and reduced risk of fraud and hacking
  - **Better data collection:** central banks with better information on economic activity, improved analysis and decision-making





# Regulating Digital Currencies and the CBDCs

- Potential disadvantages of CBDCs
  - **Privacy concerns:** central banks' access to big data of financial transactions, concerns over privacy and security
  - **Risk of cyber-attacks:** vulnerable to cyberattacks / possible theft or loss of funds
  - **Complex implementation:** complex process / significant technical infrastructure and efficient allocation of resources
  - **Legal and regulatory challenges:** less developed legal and regulatory framework / challenges wrt their impact on monetary policy and financial stability
  - **Technical difficulties:** significant upgrades to existing payment systems / technical difficulties in integration
  - **Resistance from the public:** public resistance in adopting a CBDC due to low familiarity with DCs or concerns about security and privacy

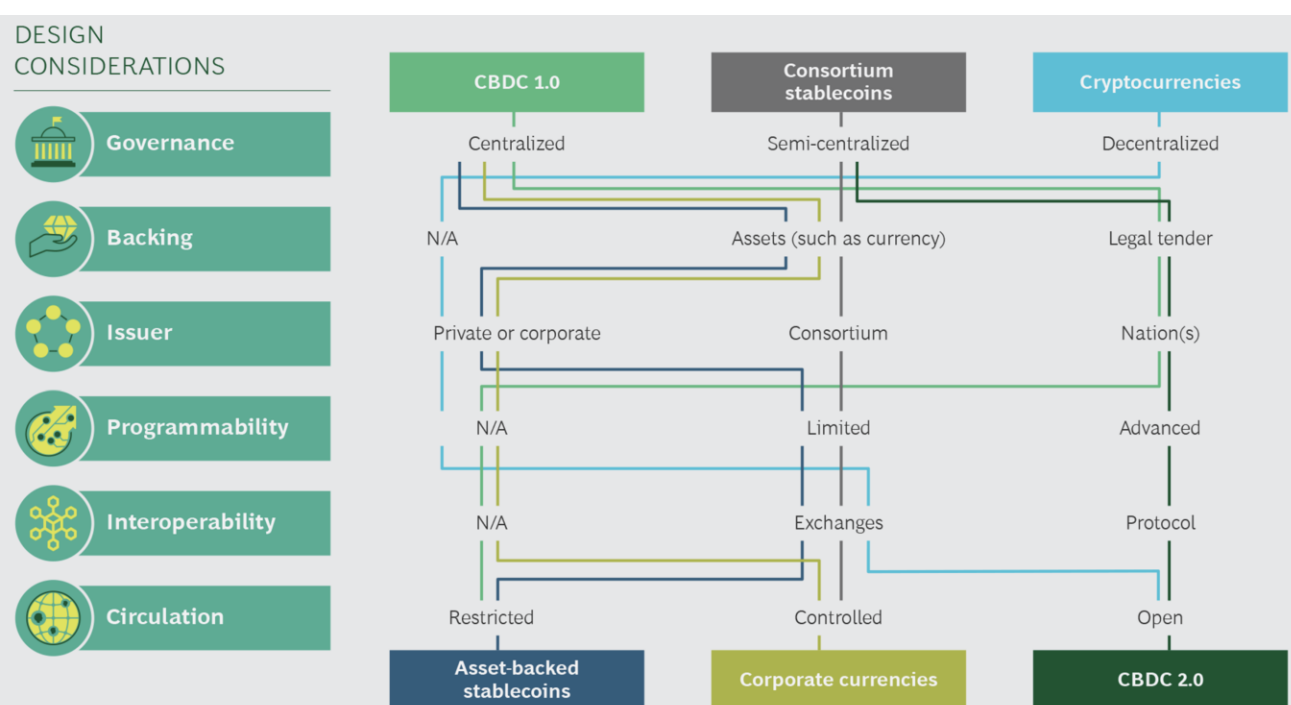
# Regulating Digital Currencies and the CBDCs

- The structural, regulatory, and technical challenges for the DCs
  - (i) Structural Challenges:
    - Lack of clear and consistent regulations and standards
    - Complex monetary systems: DCs integration complex and difficult
  - (ii) Regulatory Challenges:
    - Money laundering and terrorist financing: use for illegal activities / need to detect and prevent
    - Consumer protection: vulnerable to scams and fraud / need to ensure consumer protection
    - Privacy concerns: regulators to balance privacy concerns with need for financial surveillance
  - (iii) Technical Challenges:
    - Scalability: need to handle large amounts of transactions / scalability a major challenge
    - Security: prevention of hacking and theft / requires significant investment in cybersecurity
    - Interoperability: work seamlessly with existing payment systems / technical integration and compatibility
    - User experience: user-friendly / significant investment in user experience design and testing



# Part III - Case Studies

- Case studies on five countries
  - one is a non-OIC country
  - based on the level of financial sector development and digitalization
  - phase in CBDCs, legal and regulatory framework, current initiatives, coverage, challenges, and issues
- Lessons learned from practices of leading countries
  - share knowledge and experience sharing
  - transfer knowledge and increase cooperation between OIC members
- Specific recommendations
  - derive general advice for all the OIC member countries





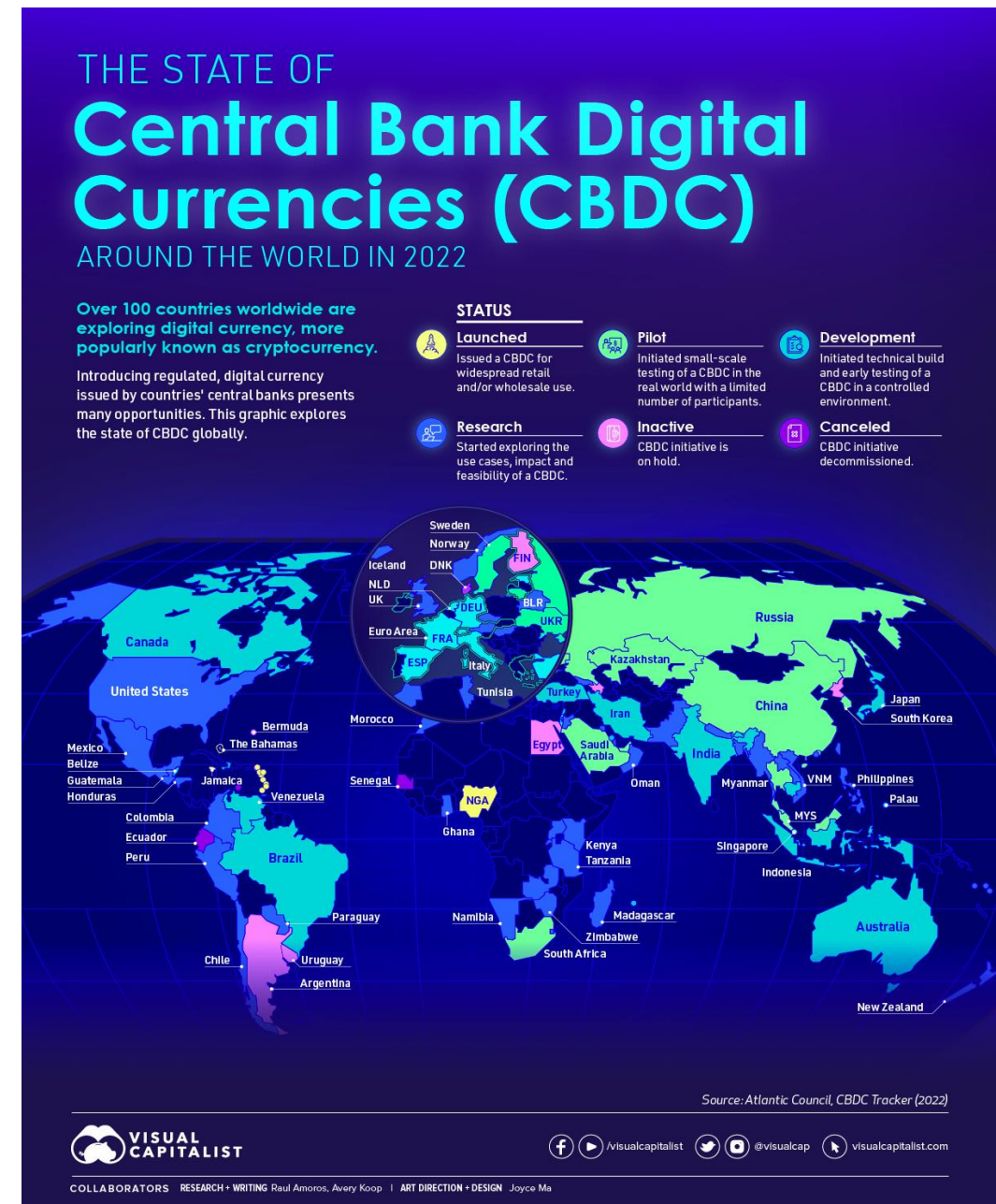
# Case Studies

- Five Criteria for Case Country Selection: ① four countries among the OIC members and one non-OIC country; ② different geographic regions; ③ legal systems/regimes; ④ different levels of financial sector development and ⑤ different CBDC adoption levels

Criteria	Description	Approach
I	OIC member countries	COMCEC List
II	Geographic groups: African, Arab, and Asian	COMCEC List
III	Legal system/regime	World Factbook
IV	Development level of financial sector	IMF FD Index
V	CBDC adoption and implementation level	Atlantic Council

# Case Studies

- Examples of CBDCs (Atlantic Council)
  - **Countries launched CBDCs:** **Nigeria**, Anguilla, Antigua and Barbuda, Dominica, Grenada, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and The Bahamas
  - **Countries piloting CBDCs:** Australia, China, Ghana, Hong Kong, India, Iran, Kazakhstan, Malaysia, Russia, Saudi Arabia, **Singapore**, South Africa, South Korea, Sweden, Thailand, UAE, and Ukraine
  - **Countries that are at the development stage:** Austria, Bahrain, Belize, Bhutan, Brazil, Canada, Cambodia, Estonia, Finland, France, Germany, Haiti, **Indonesia**, Ireland, Israel, Italy, Japan, Lithuania, Macau, Mauritius, Netherlands, Norway, Palau, Philippines, Spain, Taiwan, Tunisia, Türkiye, UK, USA, and Venezuela



# Case Studies

- Five selected case countries among OIC members
  - ❑ **Nigeria**: OIC, African Group, Common Law
  - ❑ **Pakistan**: OIC, Asian Group, Mixed (Common Law + Shari’ah)
  - ❑ **Qatar**: OIC, Arab Group, Mixed (Civil Law + Shari’ah)
  - ❑ **Indonesia**: OIC, Asian Group, Mixed (Civil Law + Shari’ah)
  - ❑ **Singapore**: Non-OIC country, Common Law

Status	OIC Countries
Pilot	Iran, Kazakhstan, Malaysia, <b>Nigeria</b> , Saudi Arabia, UAE
Development	Bahrain, <b>Indonesia</b> , Tunisia, Türkiye
Research	Azerbaijan, Bangladesh, Jordan, Oman, <b>Pakistan</b> , <b>Qatar</b>
Inactive	Benin, Egypt, Kuwait, Lebanon, Palestine
Cancelled	Senegal

# Thanks for your kind attention...

