Course IV:

DeFi Risks and Opportunities

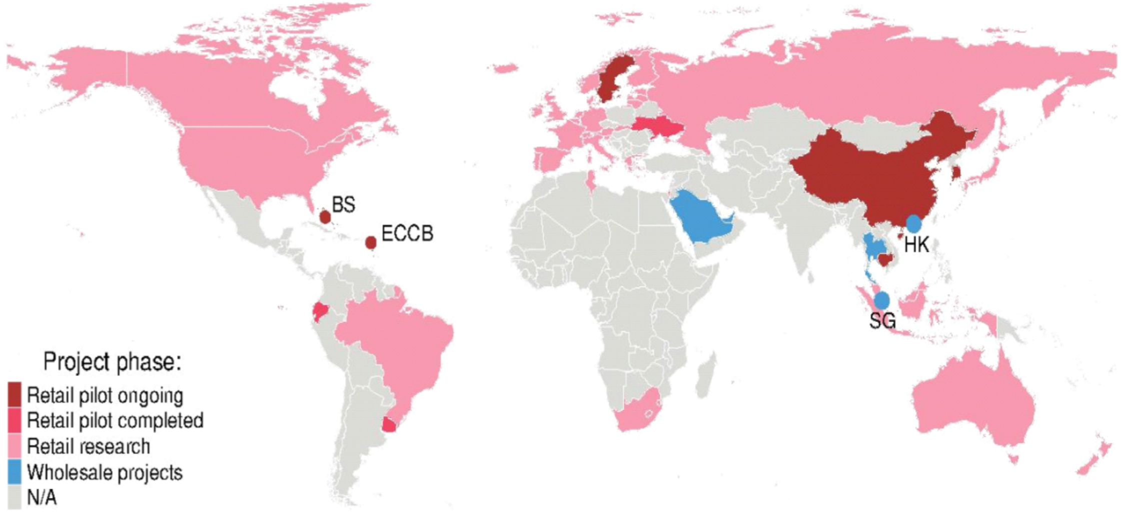
4. Regulatory and Environmental Risk

(ii) CBDC Competition

Risks: Regulatory risk: CBDC

CBDC projects status

Graph 3



BS = The Bahamas; ECCB = Eastern Caribbean central bank; HK = Hong Kong SAR; SG = Singapore.

Basics

- Digital form of a fiat currency
- Not a cryptocurrency running on a public, permissionless network
- Not a new concept – first proposed in 1987 by James Tobin
- Many countries in R&D phase and some (China, Sweden) in pilots. Digital Euro to be announced in late 2021 by the ECB

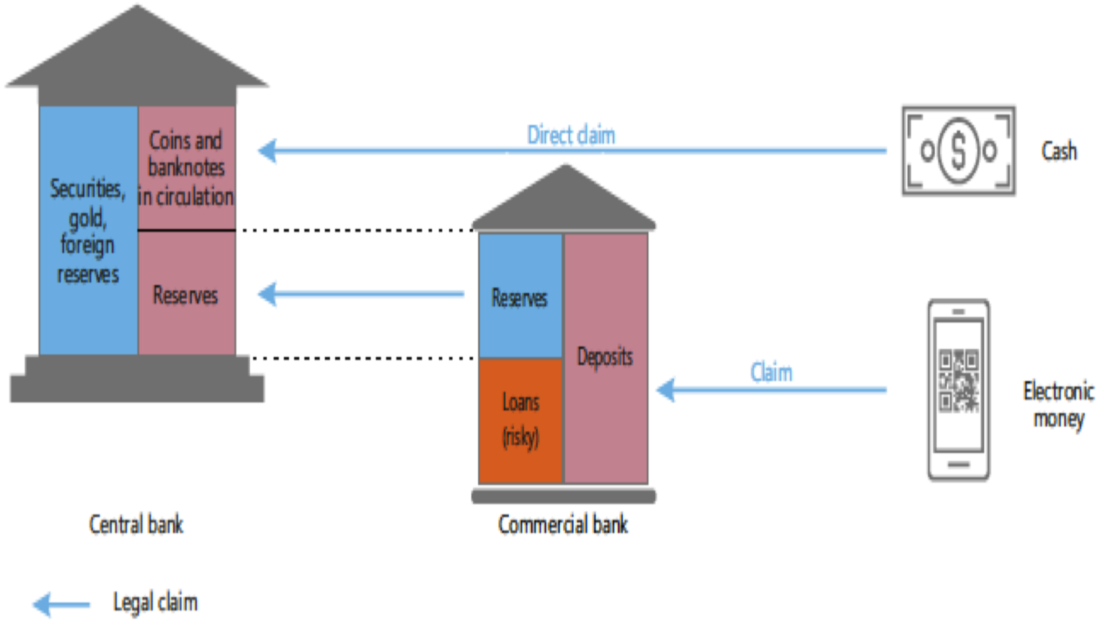
https://www.bis.org/publ/work880.pdf

Prepared with the help of Yash Patil

Risks: Regulatory risk: CBDC

Types of Money Today

- Cash is a direct claim on a central bank. Holders are fully guaranteed by the central bank
- Central Bank reserves are accessible only to institutions who have accounts with the Federal Reserve
- Commercial Bank Money (Electronic money) accounts for most of the money in circulation. This is a claim on a commercial bank, who may not insure the full amount of the holder's deposits.



https://voxeu.org/article/cbdc-architectures-financial-system-and-central-bank-future

Risks: Regulatory risk: CBDC

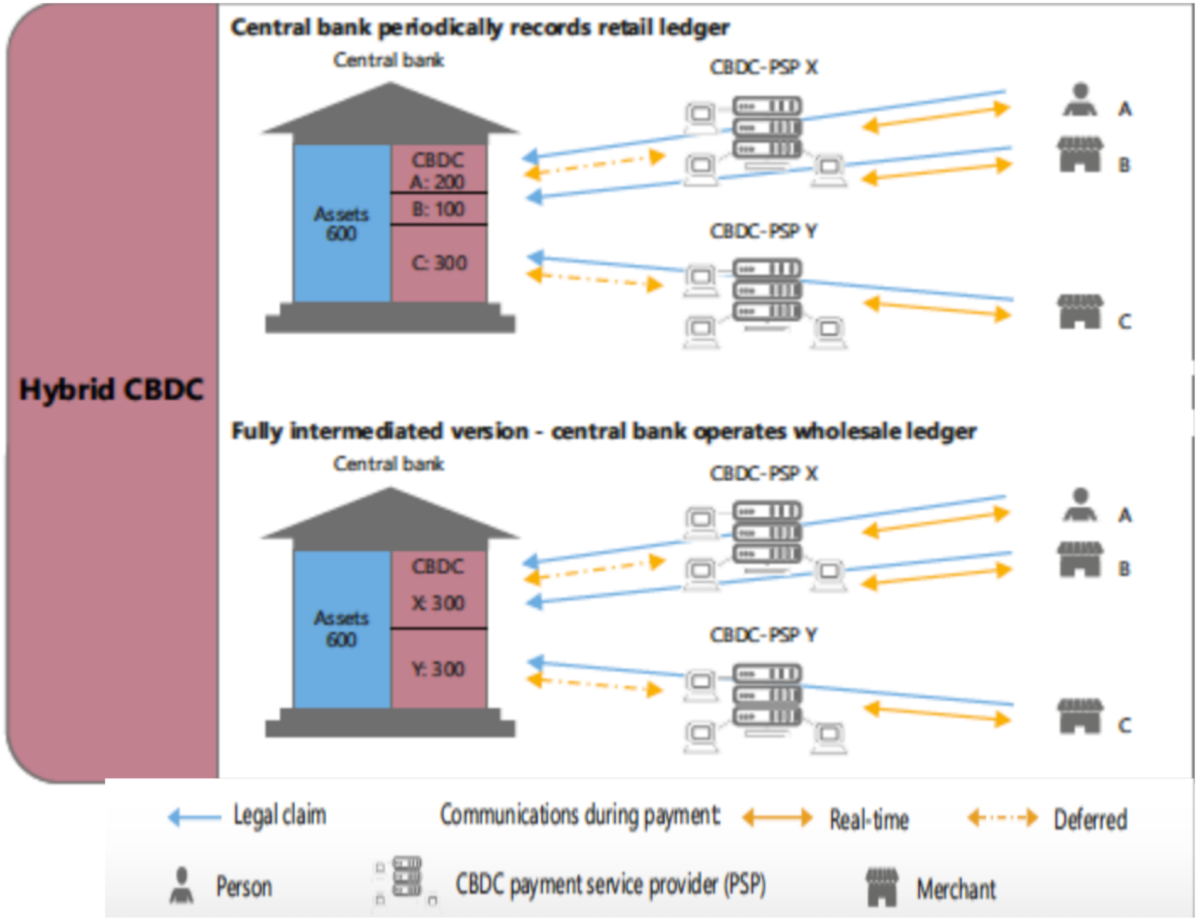
Overview

- Holder of a CBDC has a direct claim on the central bank
  - Central Bank guarantees at par convertibility
- There are several design choices for a CBDC, spanning from architecture, infrastructure, access, and interoperability
- Retail vs Wholesale CBDC
  - Wholesale – limited to commercial banks
  - Retail – includes corporations, small businesses, and individuals

Risks: Regulatory risk: CBDC Architecture

Hybrid CBDC

- Commercial Banks onboard users, handle compliance (KYC/AML), and manage accounts. 100% of cash deposits at a commercial bank backed at CB
- Central banks ultimately settle transfers and periodically record retail balances



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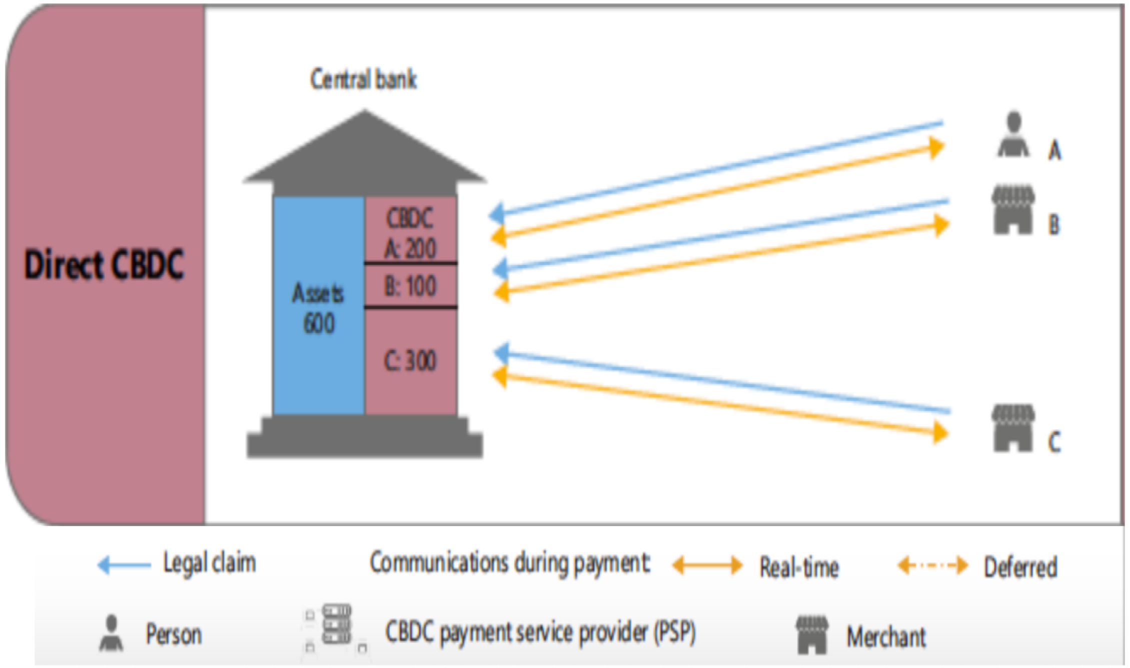
Risks: Regulatory risk: CBDC Architecture

Direct CBDC

- Central bank directly operates retail system, offers retails services, and maintains all transactions
- Direct CBDC's <u>fully disintermediate commercial banks</u>

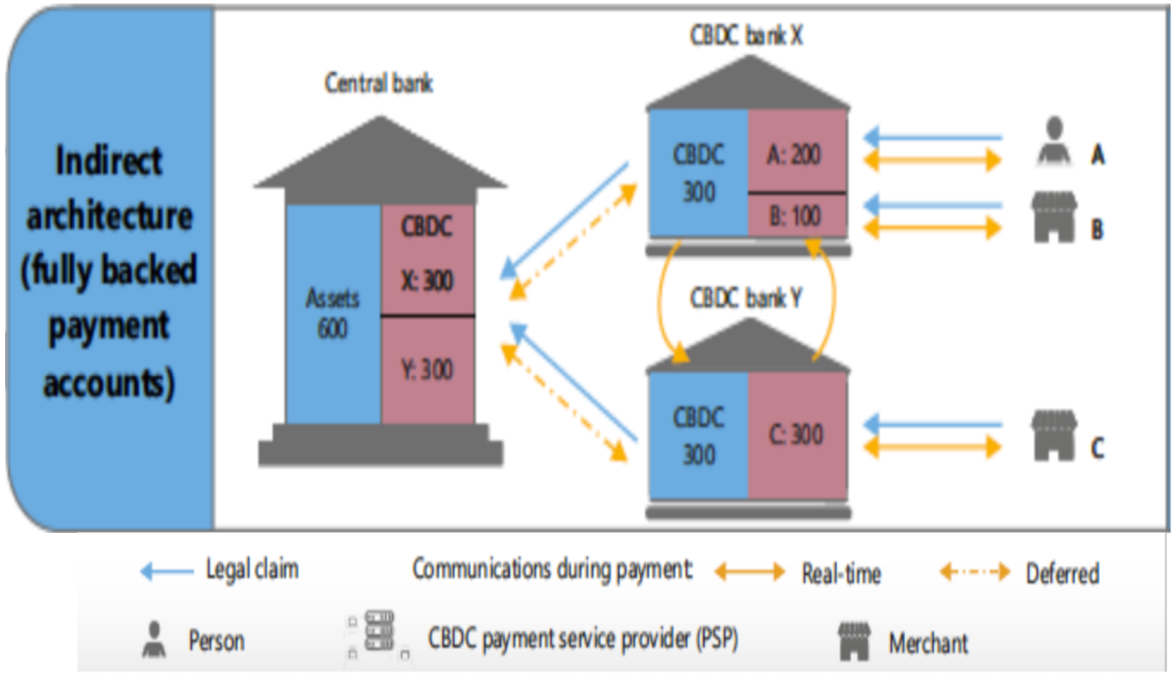


https://voxeu.org/article/cbdc-architectures-financial-system-and-central-bank-future

Risks: Regulatory risk: CBDC Architecture

Indirect CBDC

- Unlike in Hybrid/Direct CBDC Architectures, the user's digital currency is <u>not a direct claim</u> on a central bank
- CB <u>tracks only wholesale accounts</u>. In other architectures, the CB can track both wholesale and retail accounts



https://voxeu.org/article/cbdc-architectures-financial-system-and-central-bank-future

Risks: Regulatory risk: CBDC Design

Ledgers

- Ledger are centralized (Direct Architecture) or shared among CBs and intermediaries (Hybrid/Indirect Architecture)
  - Either on a centralized database or DLT
- Public, permissionless distributed systems are not being heavily explored due to a <u>lack of centralized control</u>

https://www.brookings.edu/wp-content/uploads/2020/07/Design-Choices-for-CBDC_Final-for-web.pdf

Risks: Regulatory risk: CBDC Architecture

Accounts

- Account-based access: State is recorded as a list of accounts each with its own balance. Tied to a payer’s identity
- Token-Based access: State is recorded as a list of assets, each of which has a corresponding holder
  - Token-Based accounts do not necessarily provide anonymity. Compliance with KYC/AML is still required

https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf

Risks: Regulatory risk: CBDC monetary policy

- Strengthen monetary policy transmission channels
  - Pass through of interest rates would be more direct
- Efficient transmission of stimulus money payments to citizens
  - During Covid-19, over $1.3 billion was sent to 1 million deceased individuals
- Enforce Negative Interest Rates
  - People can currently hold cash and avoid negative interest rates
  - Interest bearing CBDC's in combination with eliminating physical cash or removing large-denomination notes allow interest rates to go below 0

Risks: Regulatory risk: CBDC motivations

- Cryptocurrencies such as Diem (formerly known as Libra) and JP Morgan’s Stablecoin (JPM coin) as well as many other cryptocurrency initiatives could be a threat to monetary sovereignty
- Cash-based payments continue to decline
    - Covid-19 only accelerates this, with fears of transmission through ATMs and physical cash
- Decreases the risk of bank runs in times of crisis

Risks: Regulatory risk: CBDC motivations

- Cross Border Payments
  - CBs can offer each other CBDC accounts denominated in respective currencies
  - Universal CBDC can be used to move between jurisdictions
- Potentially promote financial inclusion
  - CBs can offer low to no fee accounts to underbanked households
- Reduces the number of illegal transactions
- Efficient collection of VAT and BAT

Risks: Regulatory risk: CBDC downsides

- Disintermediation of Commercial Banks?
  - CB directly providing interest bearing accounts and a large scale transfer of deposits could shrink commercial banks' balance sheets
- Privacy
  - Cash provides a level of anonymity that CBDCs may not guarantee
  - CBs must balance between having enough supervision to enforce truly illegal activity and potentially giving enough oversight to intermediaries to give some privacy
- Is it too late?
  - CBDC a reaction to growth of cryptos. The horse has already left the barn.

https://johnhcochrane.blogspot.com/2020/12/cbdc-in-eu.html?spref=tw