



CBDCs & Stablecoins

October 26, 2021



Agenda

- Introduction
- Understanding the Current System
- Defining CBDCs
- Current State of CBDCs
- Stablecoin Technology
- Q&A

Lecturer's Background



Ezechiel Copic

Current Role



Global Head, Public Sector
Research & Development

Previous



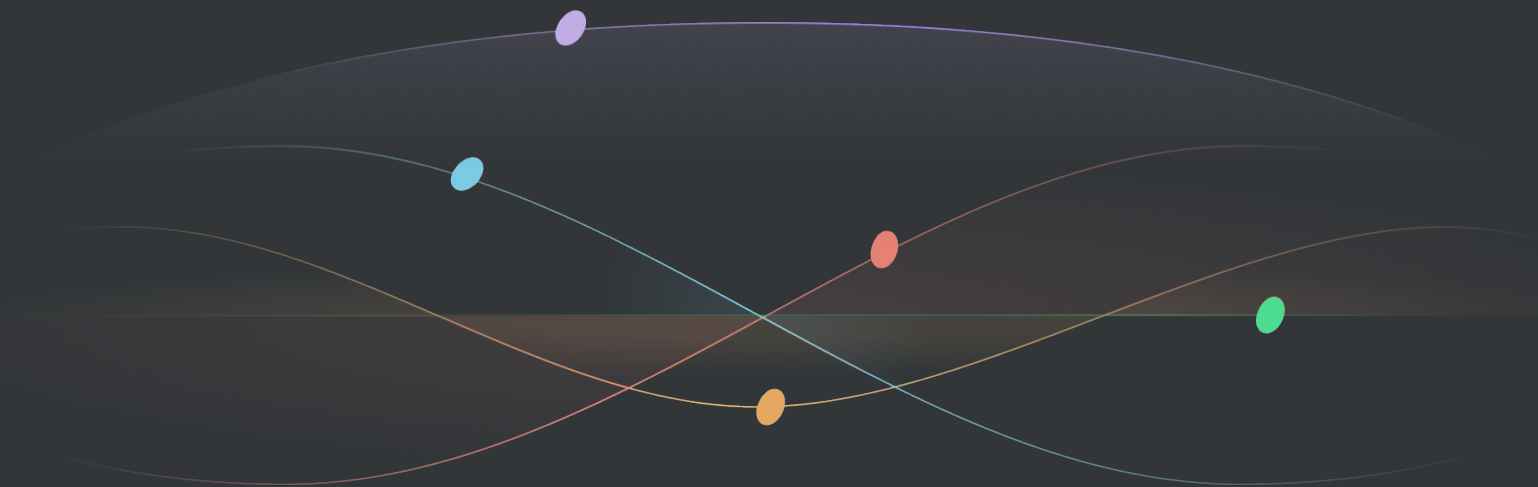
Working Groups



WORLD
ECONOMIC
FORUM



Celo is an open platform that makes financial tools accessible to anyone with a mobile phone



Key Attributes of Celo



FAST & LIGHT TRANSACTIONS

Enabling instantaneous payments
with minimal transaction costs



USER-CENTRIC DESIGN

Improving user experience
through innovative technology



FINANCIAL INCLUSION

Access to additional financial
tools and services



PROGRAMMABLE (full EVM Compatibility)

Works with a wide variety
of smart contracts



CROSS-CHAIN INTEROPERABILITY

Building bridges for seamless
cross-chain functionality

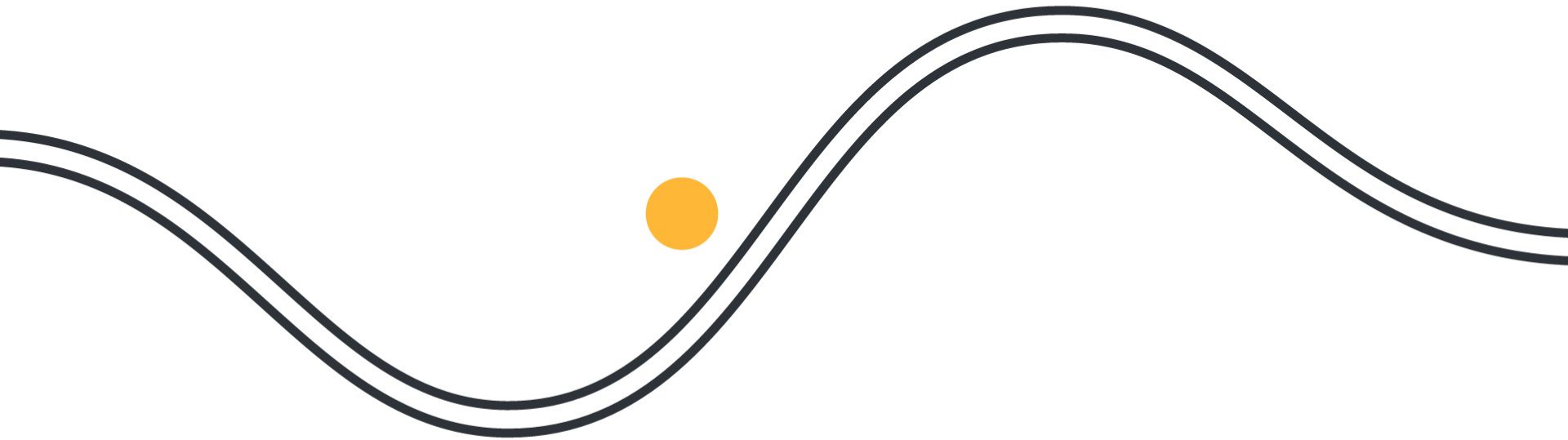


CARBON NEGATIVE

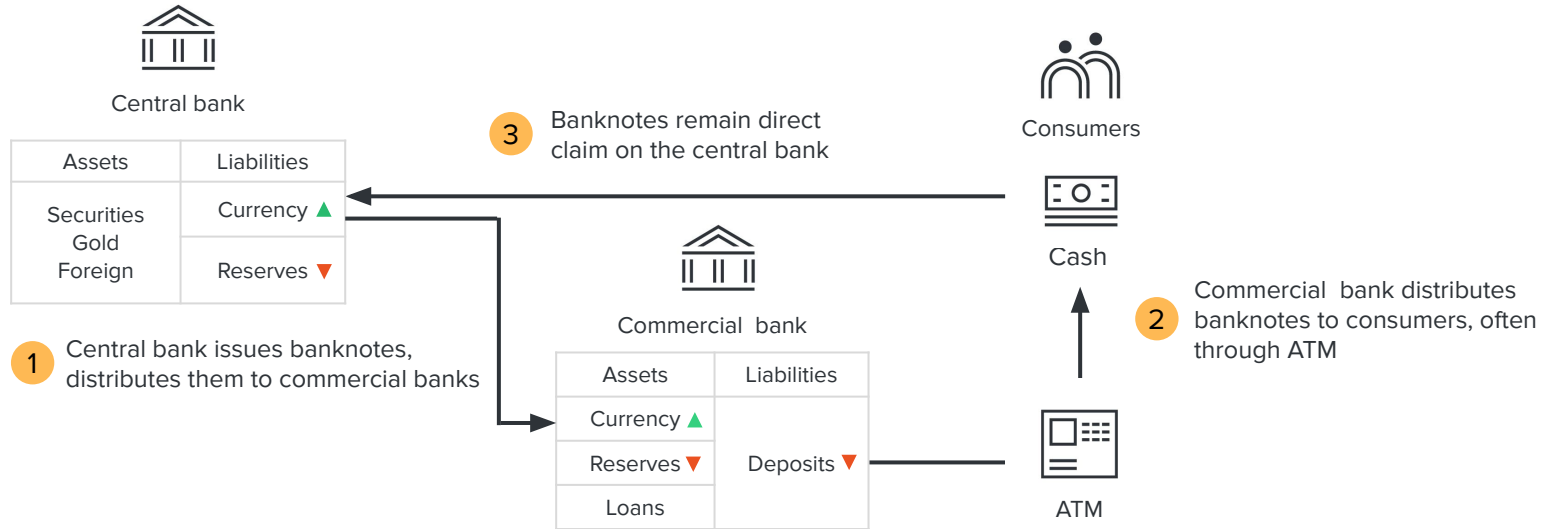
Celo is the first carbon
negative blockchain



Understanding the Current System

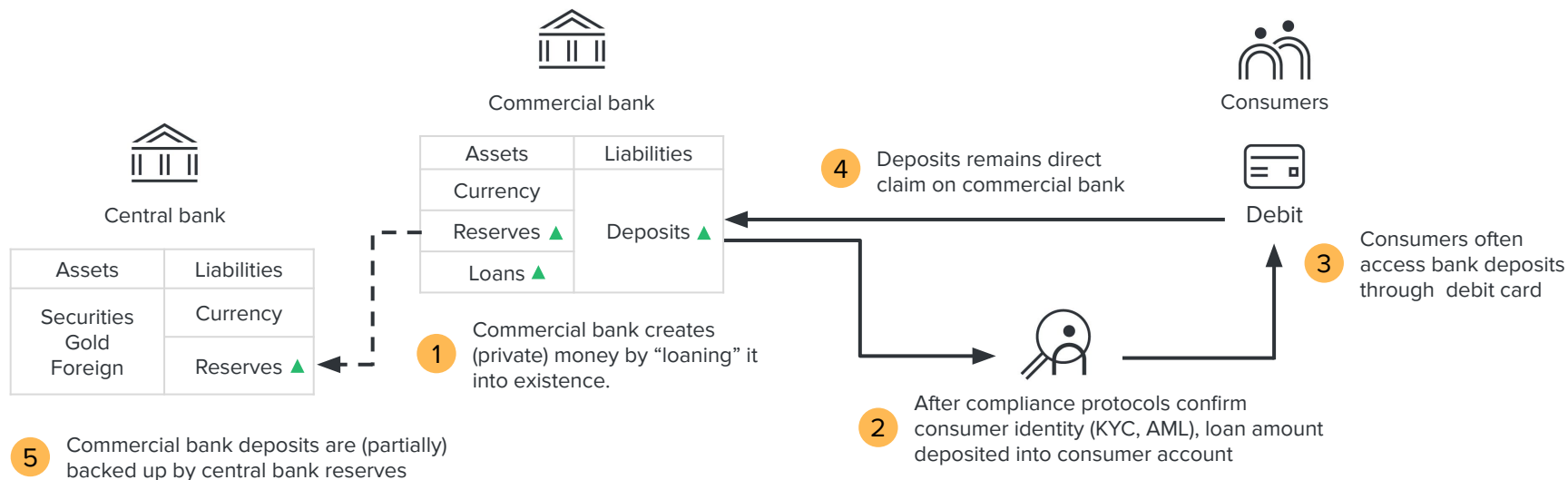


Central Bank Money



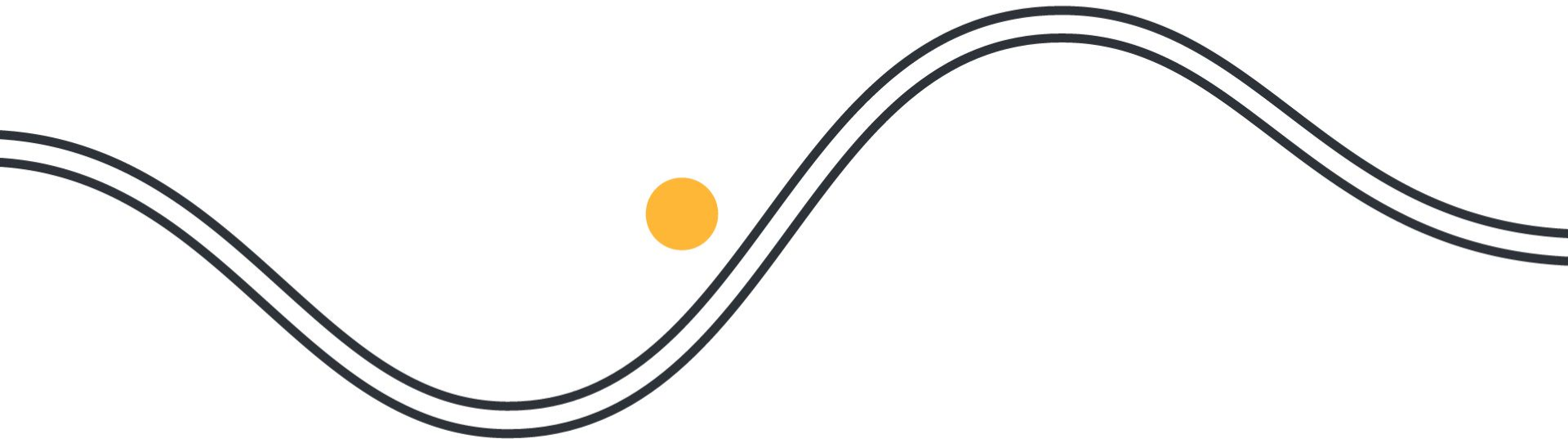
Note (▼) Central bank debits commercial bank's reserve account with the central bank to pay for banknotes, thus overall reserves decline. Additionally, commercial bank debits consumer's deposit account to pay for banknotes obtained through ATM. Decline in reserves is offset by (▲) increase of currency in circulation. Furthermore, commercial bank holdings of currency as an asset increases, insofar as they do not distribute all of the currency received from the central bank onto their customers.

Commercial Bank Money



Note (▲) The issuance of loans by the commercial bank increases loan assets for the bank, and also increases deposit liabilities, as the funds being loaned are deposited into the consumer's account with the commercial bank. Additionally, commercial banks typically have to hold a certain percentage of their deposits as reserves with the central bank, so an increase in deposits will also require an increase in reserves held at the central bank.

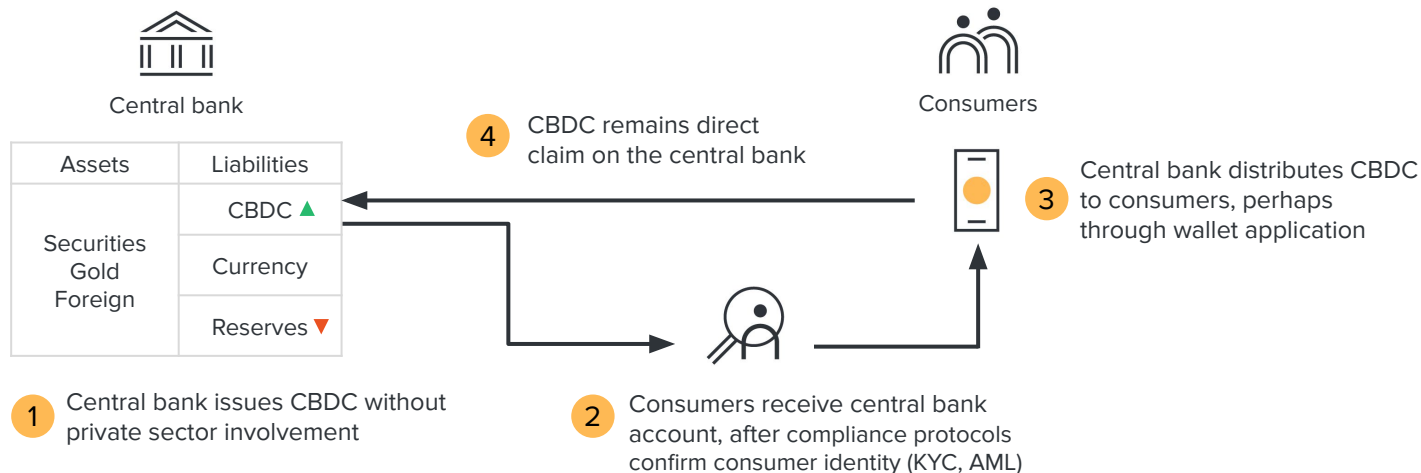
Defining CBDCs



According to the BIS...

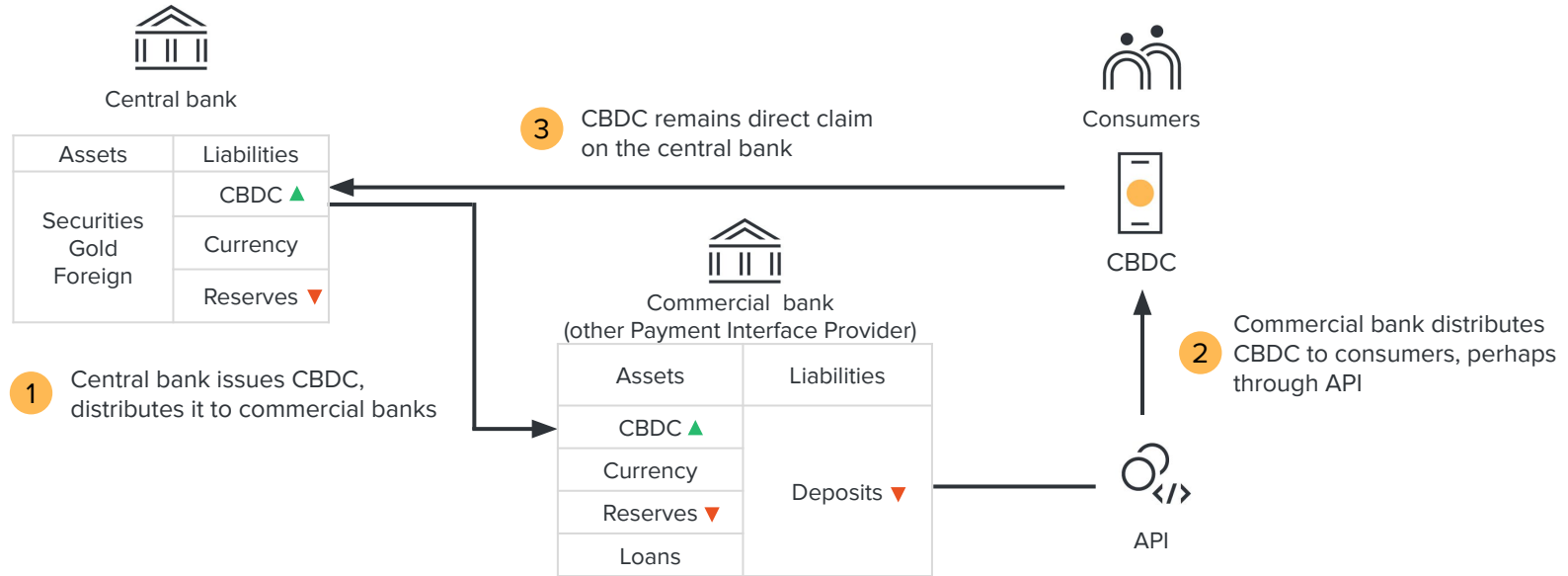
*Central Bank Digital Currency (CBDC) is a **digital** payment instrument, denominated in the **national unit of account**, that is a **direct liability** of the central bank.*

Direct CBDC



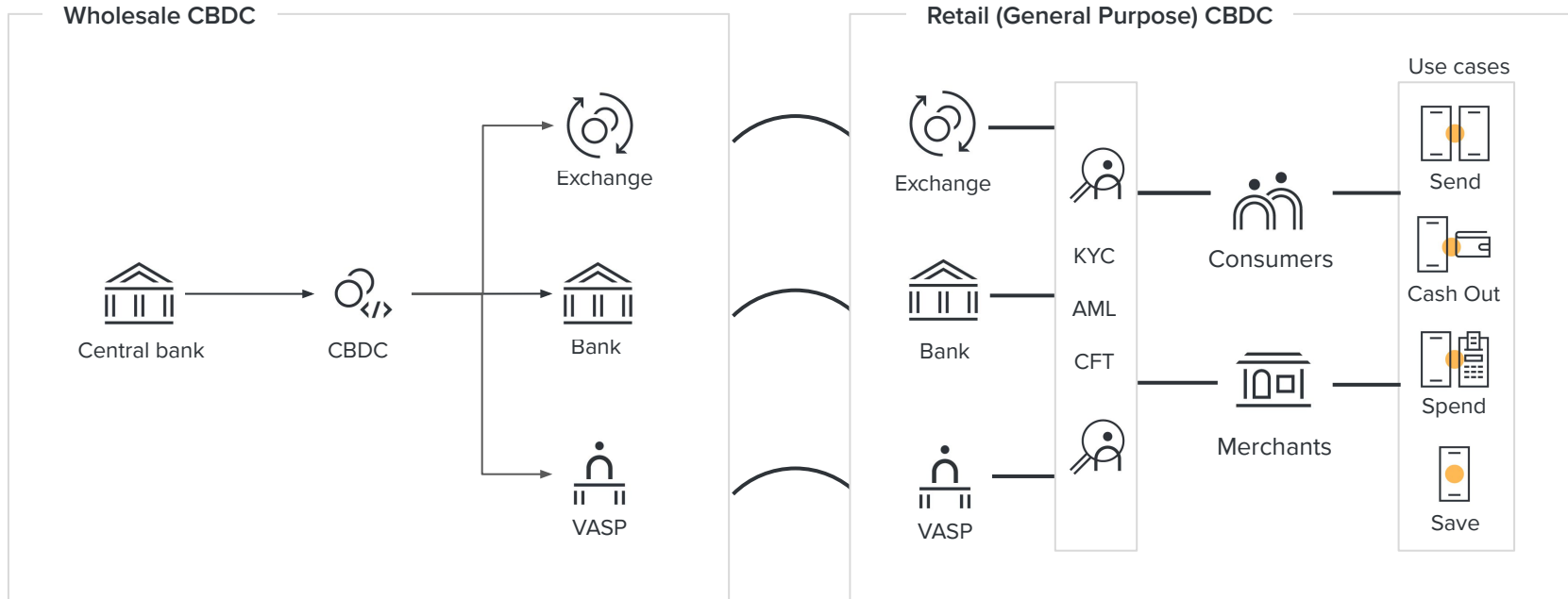
Note (▼) Central bank debits consumer's reserve account with the central bank to pay for CBDC, thus overall reserves decline. Decline in reserves is offset by (▲) increase of CBDC in circulation.

Hybrid CBDC

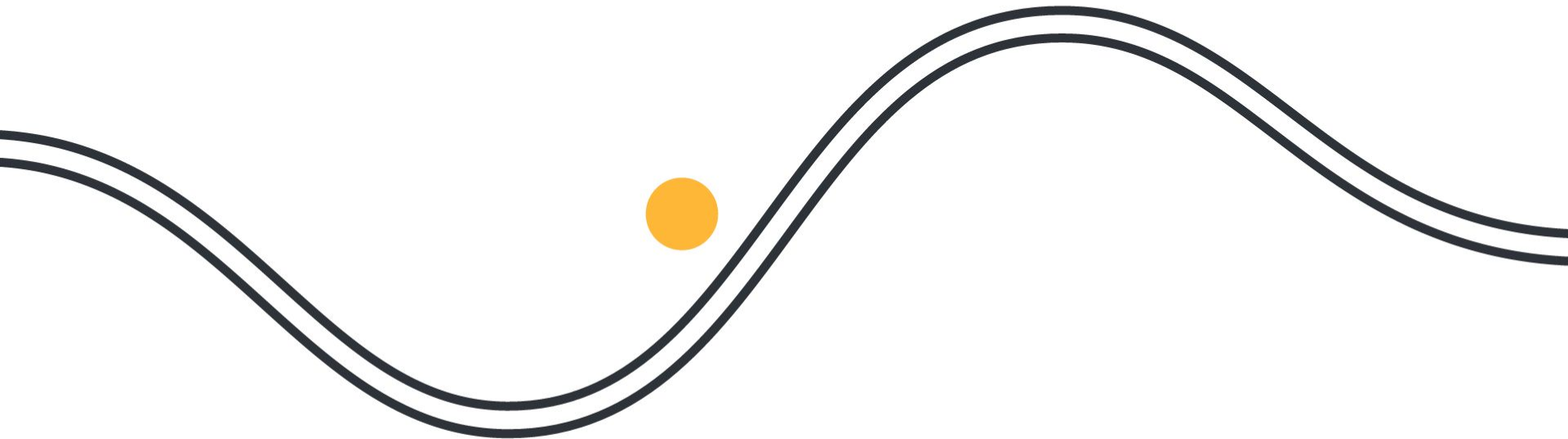


Note (▼) Central bank debits commercial bank's reserve account with the central bank to pay for CBDC, thus overall reserves decline. Additionally, commercial bank debits consumer's deposit account to pay for CBDC obtained through API. Decline in reserves is offset by (▲) increase of CBDC.

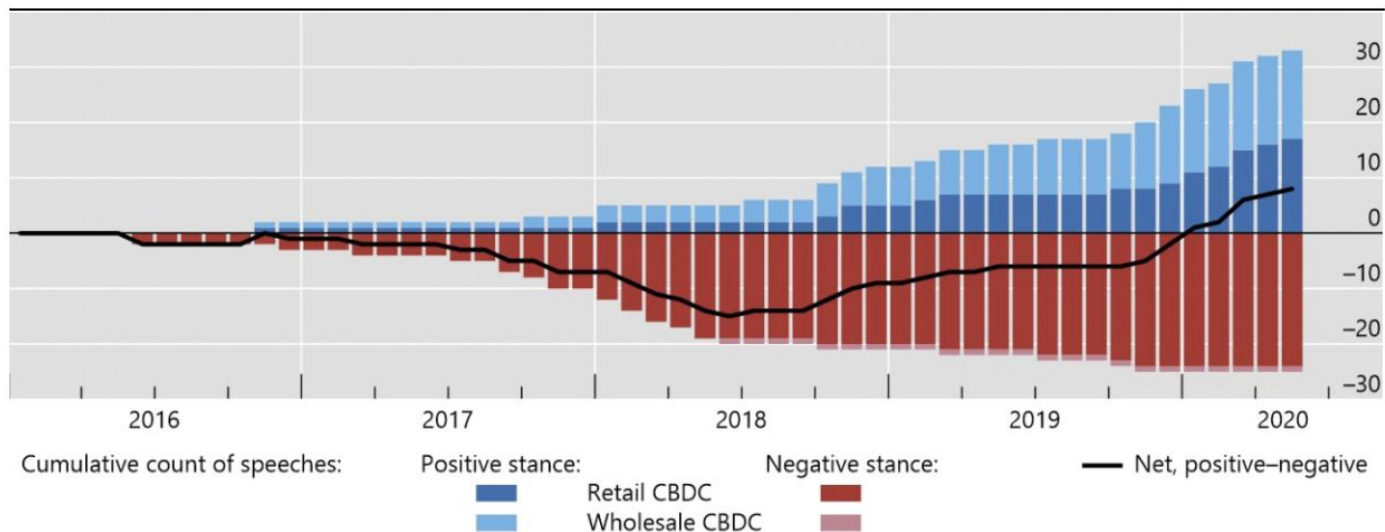
Versions of CBDC



Current State of CBDCs



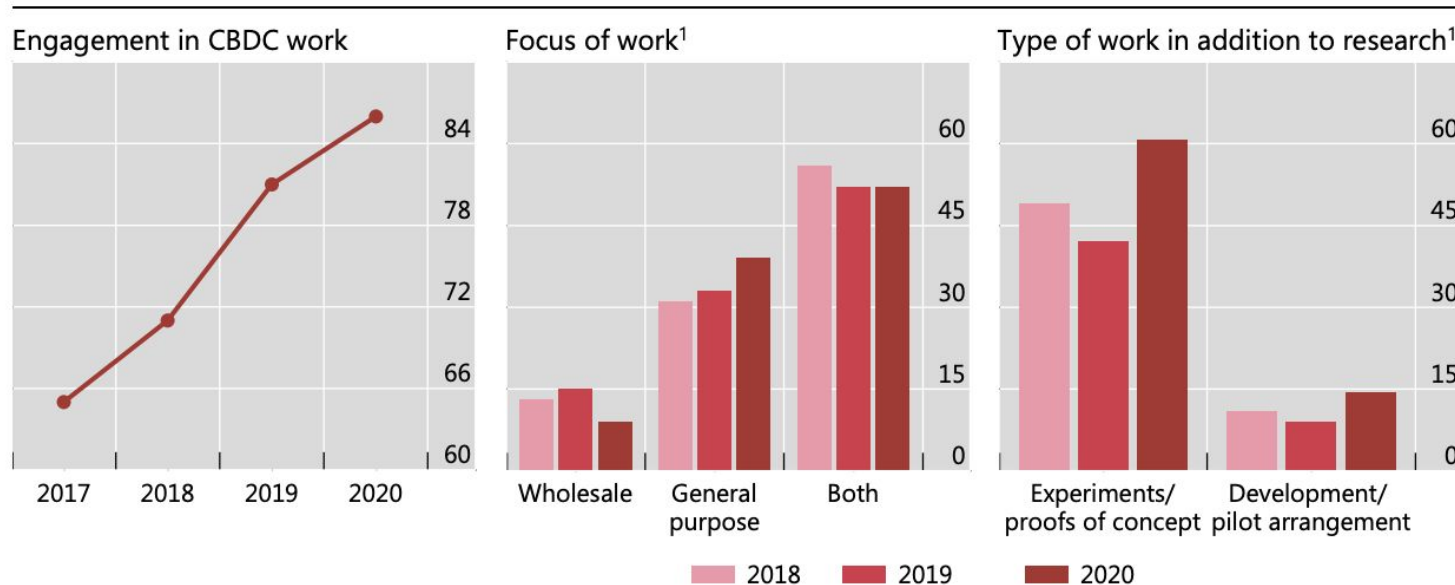
CBDC commentary turns positive



Search on keywords "CBDC", "digital currency" and "digital money". The classification is based on the authors' judgment. The score takes a value of -1 if the speech stance was clearly negative or in case it was explicitly said that there was no specific plan at present to issue digital currencies. It takes a value of +1 if the speech stance was clearly positive or a project/pilot was launched or was in the pipeline. Other speeches (not displayed) have been classified as neutral.

Sources: [centralbanking.com](https://www.centralbanking.com); [Central bankers' speeches](https://www.centralbankers.com); central banks' websites; authors' calculations.

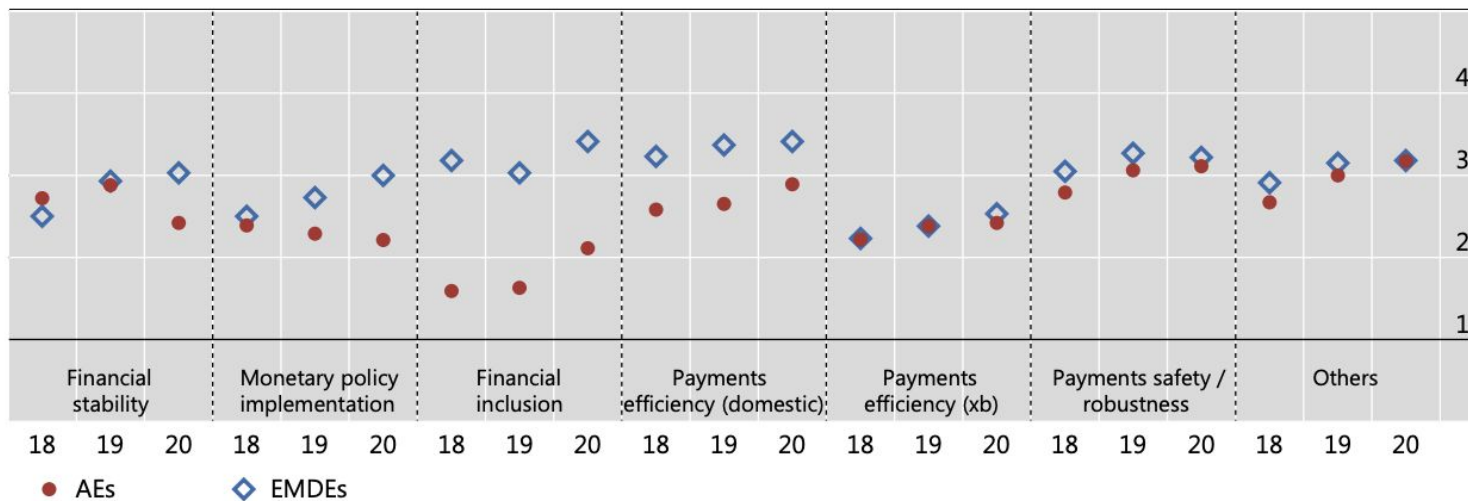
CBDC interest continues to grow



¹ Share of respondents conducting work on CBDC.

Source: BIS central bank survey on CBDCs.

Motivations for Retail CBDC



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

Source: BIS central bank survey on CBDCs.

Examples of CBDCs

Progress of Research & Development of E-CNY in China

**Working Group on E-CNY Research and Development of the
People's Bank of China
July, 2021**

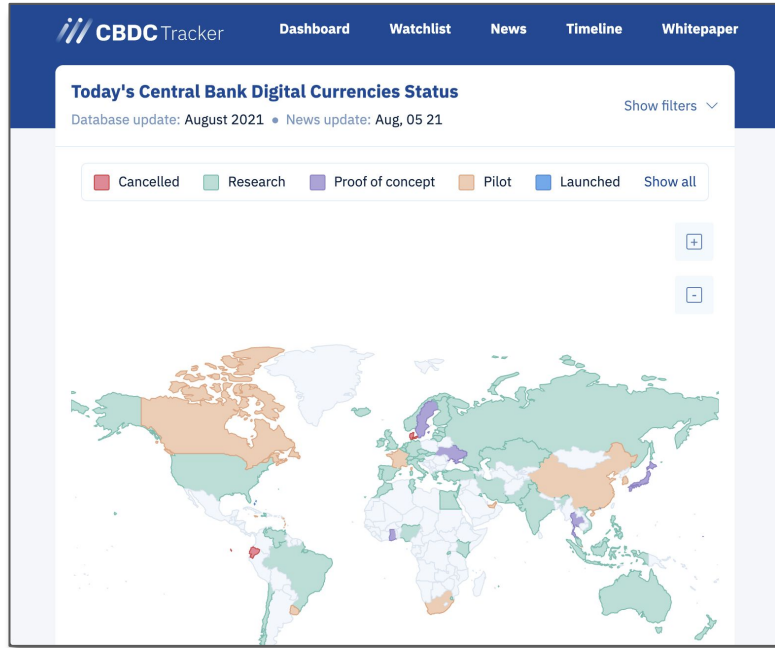


PROJECT SAND DOLLAR:

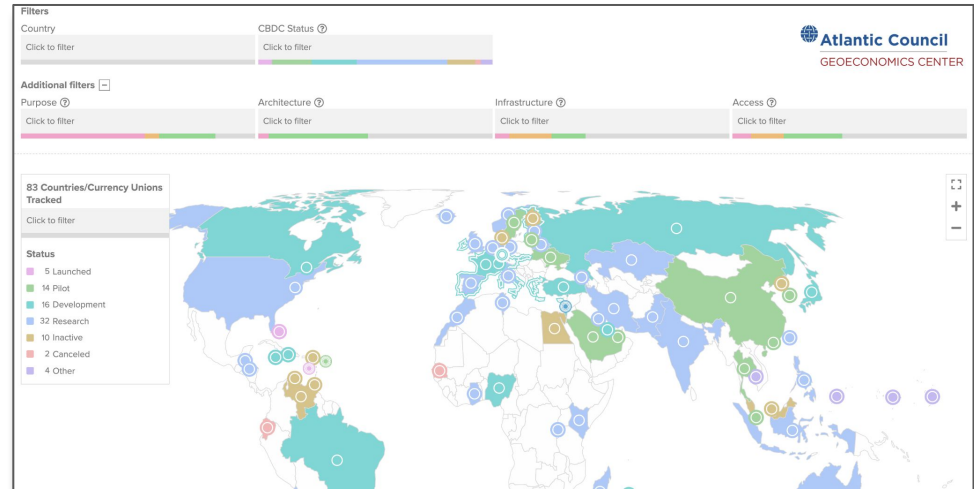
A Bahamas Payments System Modernisation Initiative

24 December, 2019

Tracking CBDCs



cbdctracker.org



<https://www.atlanticcouncil.org/cbdctracker/>

Important Research



Bank for International
Settlements



International
Monetary Fund



World Bank



World Economic
Forum



G7 Working Group
on Stablecoins



Center for Latin American
Monetary Studies

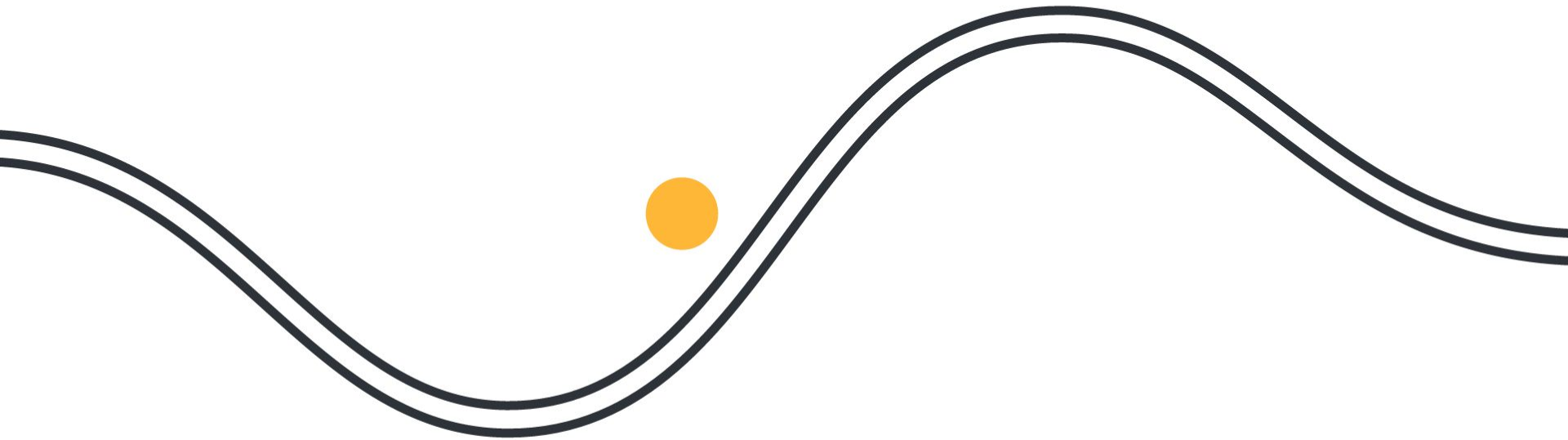


Official Monetary and
Financial Institutions Forum

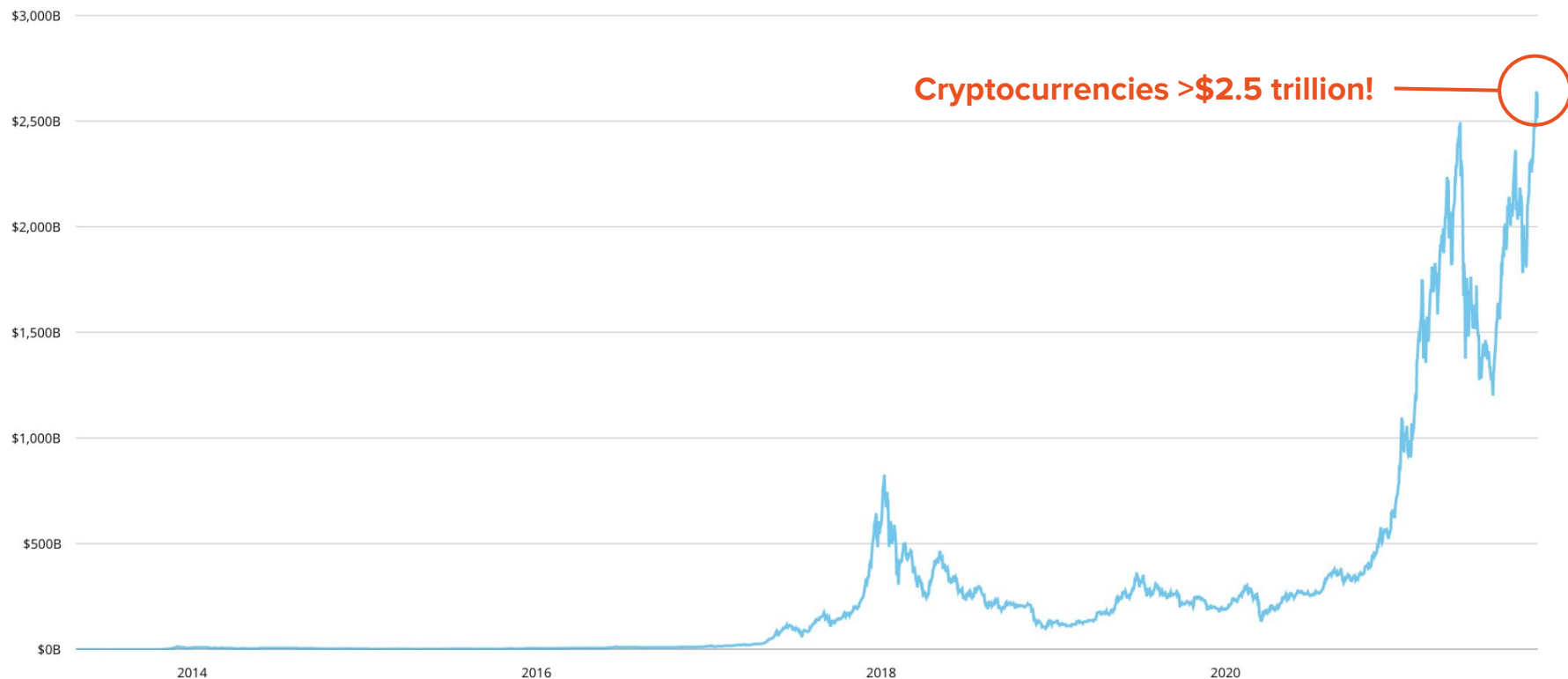


Individual central
bank research

Stablecoin Technology



Cryptocurrency Market Cap



Cryptocurrencies impractical as medium of exchange



Credit: Photos.com

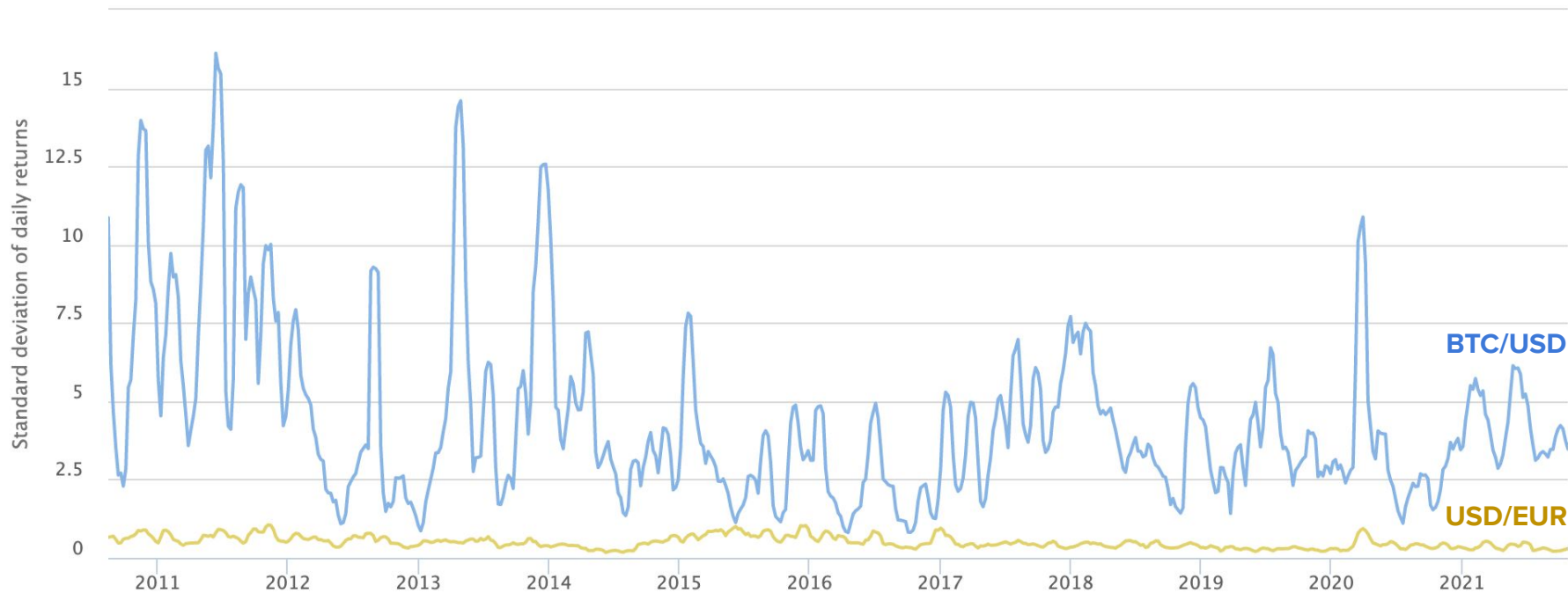
Average price for a cup of coffee in the US:

- U.S. Dollars = \$3.77
- Bitcoin = 0.00006 BTC
- Ethereum = 0.0009 ETH
- Litecoin = 0.019 LTC

Note: Exchange rates as of October 25, 2021

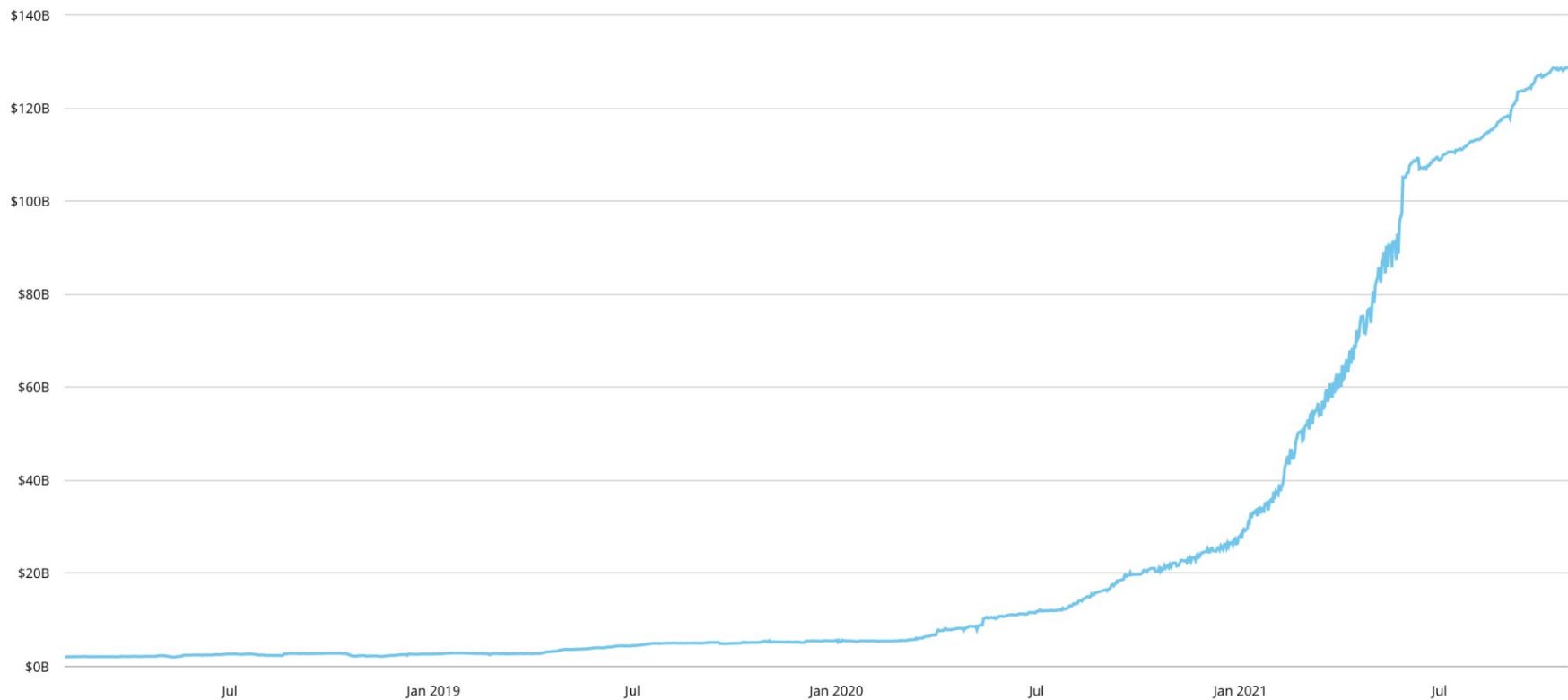
Cryptocurrencies also highly volatile

30-day price volatility











Source: buybitcoinworldwide.com

Stablecoin Market Cap

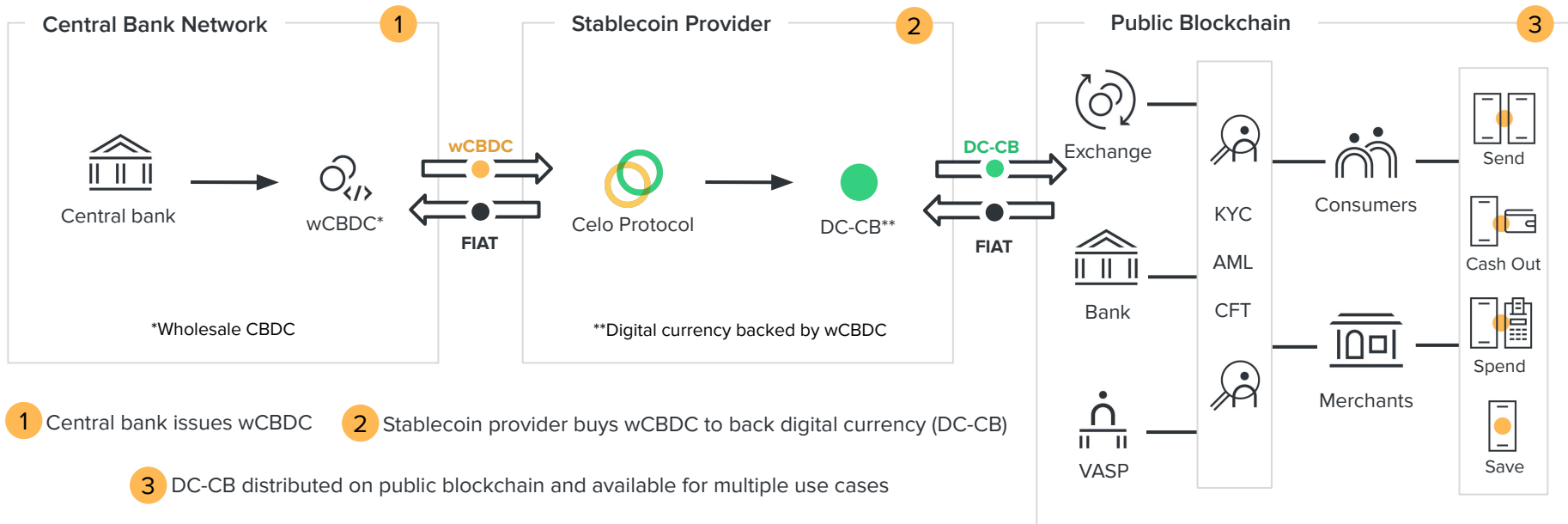


Source: btctools.io

Classification of Stablecoins by Stability Mechanism

| Type | Collateral | Example | Governance | Transparency | Stability | Risks |
|--|--|---|------------------------|--|-----------------------------------|---------------------------------|
| Fiat / Commodity Collateralized | Fiat / Commodities, Off-chain |   | Centralized, regulated | Opaque, requires audits on collateral and counterparty | Central entity storing collateral | Counterparty, Liquidity, Demand |
| Crypto Collateralized | Crypto, On-chain |  | Decentralized | Transparent | Crypto collateral | Crypto, Demand |
| Seigniorage Share | Seigniorage Coin, On-chain |    | Decentralized | Transparent | Seigniorage asset | Crypto, Demand |
| Algorithmic / Crypto Collateralized Seigniorage Share Hybrid | Seigniorage-style protocol with crypto-reserve, On-chain |   | Decentralized | Transparent | Seigniorage asset | Crypto, Demand |

Combining CBDCs and Stablecoins





Q & A



Thanks for your time.

Ezechiel Copic

Global Head, Public Sector Research & Development

ezechiel@clabs.co

