

What is a CBDC?

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Payment Systems in the Internet Age

Global Interdependence Center

February 6, 2017

The terms....

- e-money
- e-cash
- digital money
- electronic money
- virtual currency

all predate cryptocurrencies

Most money is digital.

- Bank deposits
- Reserve Balances at Federal Reserve Banks
- Cash on prepaid cards

So the word “digital” doesn’t denote much that is special or unique to current situation.

Defining a CBDC

- Key distinguishing feature: *Digital entries representing CB money or claims to CB money that exist off of the CB's balance sheet.*
- Distributed Ledgers
- Can be open (public and permissionless) or closed (private and permissioned)
- Two very different visions/very different objectives
- must be the potential, at least, for transactions to occur without the involvement/consent of the central bank

Fedcoin

- JP Koning (April 14, 2013) gave birth to Fedcoin when he argued that transferring Fedwire Funds to a DL would eliminate its dependence on centralized processors and increase its resiliency.
- Fedcoin term appears in October 2014
- Principles of Fedcoin had been articulated in another post by Sina Motamedi a couple of months earlier
- Fedcoin is the notion that captured the attention of pundits, practitioners and policy makers
 - endorsed by David Andolfatto at the International Workshop on P2P Financial Systems 2015
 - catchier than bitdollar

Fedcoin

- Fedcoin proposal emphasizes *bitcoin-as-product* over *bitcoin-as-philosophy*.
- the goal is to create a stable and dependable Bitcoin-like currency even if this means involving the central government and abandoning Libertarian principles.
- Simply want a better cash
- Primary role of CB is to create price (exchange rate) stability

Fedcoin

- Price stability is achieved by tying the value of Fedcoin to the US dollar.
- Two-way convertibility
 - Avoid problems of competing monies (Milton Friedman, 1959; Benjamin Klein, 1974, Garratt and Wallace, 2016) since Fed acts as gatekeeper
- Fedcoin proposal is really more about having **alternative “forms” of sovereign currency** than what monetary economists would call a competing, private outside money.
 - Three parts to the monetary base: cash, reserves and Fedcoin
 - Vast array of policy implications: Speech by Ben Broadbent (Deputy Gov. for MP, BoE)

CAD-Coin

The Jasper Distributed Ledger Settlement Platform



- 1 Participants pledge T1 cash collateral into a special pooled account held by Central Bank
- 2 Central Bank converts cash collateral to generate CAD-COIN
- 3 Central Bank transfers CAD-COIN to fund participants' accounts
- 4 Identifiable, trusted counterparties exchange assets on the CAD-COIN platform
- 5 Participants redeem CAD-COIN for T1 cash collateral
- 6 Central Bank destroys redeemed CAD-COIN

Design Assumptions

- Network participants (FIs) each set up a digital currency account as part of a CAD-COIN asset registry
- The CAD-COIN asset registry is owned by the Central Bank; the digital funds belong to the FI
- The Central Bank issues depository receipts, not tokens
- The CAD-COIN shared ledger reflects real-time accurate account balances for each digital currency account
- All network participants are trusted and authorized to perform transactions

Carolyn Wilkins, senior deputy governor for the Bank of Canada

“Experiments we are undertaking with DLT, such as this one, are confined to interbank payments systems.”

“None of our experiments are to develop central-bank issued e-money for use by the general public.”

Forbes

Central Bank Inside Money

- Technically, a CAD-coin is a depository receipt; it gives the holder a *transferable claim* on its value in central bank money.
- Still a CBDC
- Could be considered “inside money” since its value is backed by assets on the CB’s balance sheet.
 - This interpretation is at odds with the conventional usage of the term “inside money”, which is usually short for “inside the private sector”.
 - Not a form of “private credit that circulates as a medium of exchange” (Lagos, 2006)
 - CB is acting like a private agent (analogous to private bank issuance of gold certificates)

Legal and Regulatory Issues

- A key operational requirement is that a legal structure is in place that will ensure that *a transfer of CAD-coin is equivalent to a full and irreversible transfer of the underlying claim on central bank money.*
- No credit risk
- Settlement in central bank money
- PFMIIs

Differing objectives

- Fedcoin is intended as a substitute for cash (consumer facing) and, as such, it should preserve the privacy attributes of cash (and possibly improve upon them).
 - trustless/censorship resistant systems are inherently inefficient
 - Can these features even be maintained with Fed involvement
- The privacy requirements with CBDC in closed systems are very different
 - Supervision, proprietary operations
 - Can take advantage of non-PoW protocols (Corda)
 - lower costs, more resilient
- Grand prize: Simultaneous clearing and settlement!

Future

- Cooperation is key (positive externality in R&D, interoperability requirements, standardization requirements, network effects)
- Consortiums (R3), open source protocols