Government and Private-Sector Backed Digital Currencies in the Fintech Era

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Global pandemic and Fintech

- COVID-19 creates permanent job loss
- Survey indicates 30% of the job are not coming back
- A lot more Fintech jobs!
- More transaction and business interaction will be online (Digital currencies)
Digital Currencies

- Cashless society: Apple-pay, Credit Card, Octopus pass, Alipay, Wechat-pay
- Future: 5G+Internet of Things+Artificial Intelligence, one digital identity linked to all transactions using digital currencies
- Need a protocol, just like TCP-IP for the Internet, to facilitate all transactions, what kind of digital currency to use?
Private-Sector backed Digital Currencies

Government backed Digital Currencies

A solution to the potential problem of each?

The Future of Digital Currencies and Cryptocurrencies
Private-Sector backed Digital Currencies
Birth of Digital Currency

- True cryptocurrency: Bitcoin
- Based on the blockchain technology, distrust of the financial institutions and governments during the 2008 global financial crisis
- Utility Token, people perceived them as cryptocurrency, more ad-hoc
- Ethereum, EOS, TRON
Centralization vs. Decentralization

- Blockchain technology is a “trust” machine that take traditional intermediaries out of the equation
- Bitcoin’s all transactions are recorded on a blockchain
Financial Innovation to overcome regulation and achieve true freedom (Utopia World)

- Overcome irresponsible monetary policy:
  Plausible in developing countries with poor government credibility, also increases financial inclusion

- Overcome default risk:
  If banks go bankrupt, you still have your money

- Secure your own privacy:
  Your data is not controlled by governments, nor large corporations
Limitation of current framework

- Volatility: Without specific real assets to back Bitcoin, extremely high volatility

Fail as storage of value, and units of account, although people like to call it "digital-gold"

Solution? Stable-coin!
Facebook’s ambition: Libra

- A true global digital currency: Global money transfer in seconds
- A stable coin: backed by real asset, and a collection of low volatility assets
- All-star partners: Mastercard, Visa, Booking.com, Lyft, Uber, Vodafone, Spotify, Coinbase, Paypal
Limitation of current framework

- Volatility: Without specific real assets to back Bitcoin, Extremely high volatility
- Regulation
The Fall of Libra

- Facebook postponed the Libra project several times
- Mastercard, Visa and PayPal all exited the Libra project
- What’s Next? Tether? DeFi?
Limitation of current framework

- Volatility: Without specific real assets to back Bitcoin, extremely high volatility
- Regulation
- Medium of Exchange?

Solution: Give up using BTC in real-life but turn to stable-coin
DeFi: Decentralized Finance Repo

Customer

Settlement date

End of term

Borrow/Create StableCoin

Lend BTC/ETH (collateral)

Pay back StableCoin

Take back securities (BTC/ETH)

FinTech Firm

Over-collateralized Ratio: 150%

17% penalty fee on margin call
DeFi: DEX vs. CEX, AMM and liquidity pool

Source: Uniswap
DeFi: Skyrocking growth in asset used as collateral (3% of TMC)

Source: Defipulse.com
Limitation of current framework

- Volatility: Without specific real assets to back Bitcoin, Extremely high volatility
- Regulation
- Medium of Exchange
- Fraud and criminal activities: Twitter Hack, lack of visible hand
The Rise and Demise of ICOs

Funds raised through ICOs (Jan-2016 – Nov-2018) Source: CoinSchedule https://www.coinschedule.com/stats.html?year=2018
Limitation of current framework

- Volatility
- Regulation
- Medium of Exchange
- Fraud and criminal activities:
- Scalability: or too much data to process at each node (maybe solvable with a 5G network and sharding)
- Cannot do offline transaction
Government backed Digital Currencies
Central Bank Digital Currency

Source: Bank of International Settlement
Central Bank Experiment around the World

- Bank of Canada: CADcoin under Project Jasper
- Singapore: Ubin
- Euro--Japan: Stella
- PBoC: DCEP
- South-Africa: Khokha
- HK--Thailand: Inthanon-LionRock
- Bank of England: unnamed project
Advantage of retail CBDC: Offline transaction

Source: Bank of International Settlement
Blueprint of wholesale CBDC

- A wholesale CBDC is for financial institutions that hold reserve deposits with a central bank

- It could be used to improve payments and securities settlement efficiency, as well as to reduce counterparty credit and liquidity risks
CBDC: Flexible Monetary Policy

- Bitcoin is criticized for lack of flexible monetary policy

- CBDC can potentially go below the zero lower bound by charging negative interest rate.
Cooperation between Government and large Fintech firm?

• Government need large Fintech firm’s distribution channel: Facebook, Whatsapp, Wechat

• Large Fintech firms need green light from the government

• Privacy becomes an issue, nevertheless

• Token-based vs. account-based to solve the privacy issue
Summary & Outlook

- Private-Sector Backed Digital Currencies help to go around the sovereign authorities, but suffer from technological barrier and heavy regulations.

- Government Backed Digital Currencies have more credibility and more likely to succeed, but privacy may be a big problem and the influence on the monetary policy is unclear.

- Likely cooperation between the two entities.

- Digital currencies will fully replace cash one way or another in the future.