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?

Outline

• 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 stablecoin

DeFi: Decentralized Finance Repo



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)



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

CBDC: an increasingly likely option

Graph III.10





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.