Designing Trust
- Potential Value of Distributed Ledger Technologies

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Several Misunderstandings

- DLT is crypto-currency…
- DLT is for ICO (Initial Coin Offering)…
- DLT is superior to centralized systems (or vice versa)
- Centralized systems will disappear…
DLT has potential of wide application, and crypto-currency is just one of them.

- Crypto-currency might be one of the most difficult cases of application, due to the reason other than technologies.

DLT is not necessarily used for tokens newly issued at ICO.

- The recent problems of ICO and crypto-currency are not directly related to DLT.

The advantages of centralized systems and DLT depend on circumstances.

Centralized systems and DLT will co-exist.
Creating “Trust” is a key – not only for financial services, but also for any businesses -
Multiple Ways for Creating and Maintaining Trust

✓ Long history of soundness…
✓ Long-term customer relationship…
New Ways for Creating Trust
- With Applying New Information Technologies

- In new businesses such as sharing-economies and e-commerce of used products, the buyers and the sellers of goods and services are often unknown to each other.
- For supporting new businesses, information technologies are applied to utilize evaluation by many users and suppliers.
Advantages of DLTs and Centralized Systems Depends on Circumstances

✓ Is there any credible central bookkeeper?
✓ Participants are known to each other, or perfect strangers?
✓ Structures of business practices are centralized or de-centralized?
Money is, and should be, based on trust.

In most countries central banks operate as the issuer of currencies, and there are various institutional frameworks to establish and maintain people’s trust to them. Thus, they can be regarded as credible centralized bookkeeper.

Creating trust is costly. (For bitcoin’s case, huge amount of electricity is consumed for “mining”. So, it would be difficult for crypto-currencies to compete with credible sovereign currencies in payments and settlements. (Since they have to compete with already-established trust.)
TOKYO Digital currencies won't topple hard money printed by central banks any time soon, particularly in countries such as Japan with a solid, established financial infrastructure, a senior Bank of Japan official said on Tuesday.

But the need for central banks to maintain public trust in their policies has increased as the evolution of financial technology - or "fintech" - gives the public an alternative to using cash, Hiromi Yamaoka, head of the BOJ's payment and settlement systems department, told Reuters.

In April, the BOJ established a section in charge of fintech to offer guidance to banks seeking new business opportunities.

The Bank of Canada is experimenting with a payments system based on the technology behind virtual currencies.

Yamaoka said that while there was no plan for the BOJ to engage in a similar experiment, the increasing presence of digital currency was among topics keenly studied by the bank. "Fintech is an area with potential to revitalise Japan's economy," he said. "That's why policymakers want to work hand in hand with the private-sector."

Yamaoka, who oversees BOJ efforts to promote fintech in Japan, said fintech could be a mixed blessing for domestic financial institutions saddled with the cost of maintaining branch offices and automated-teller machines (ATM) nationwide.

Central banks of advanced nations, including the BOJ, have been printing money aggressively to reflate their economies with little success. While their hope is to generate inflation, critics say the move could erode the value of their currencies and damage their credibility.

Fintech, which involves new technologies to make financial services more efficient, has been under the global spotlight because of its promise - or threat - to "disrupt" traditional financial activity.

It gained prominence in the United States partly on public distrust over traditional banking after the collapse of Lehman Brothers in 2008 led to bail-out of banks with taxpayers' money.

In Japan, public trust over the banking sector did not waver as it was relatively unharmed by the Lehman crisis, which meant fintech start-ups were better off cooperating - rather than challenging - traditional banks, Yamaoka said.

"In a country like Japan, where the public has confidence over the banking system, it's important to create an environment where banks and start-ups work together," he said.

While Japanese banks can use fintech to cut costs, the merit of maintaining huge financial infrastructure could diminish as the use of new technology expands, Yamaoka added.

"One of the trends of fintech is the possibility of providing financial services by smart-phones without any 'brick and stone' infrastructure. In that trend, the heavy infrastructure of ATMs and branches means it's difficult to gain a competitive advantage," he said.

A laggard in embracing the fintech revolution, Japan has moved to ease investment restrictions that could free up the flow of capital in an economy sitting in an estimated $9 trillion in individuals' cash deposits.

Fintech has also drawn the attention of central banks around the world as something that could change settlement systems and even threaten their control of money printing in the long run.
In the current revolution of information and Data, DLT has potential to connect variety of activities with shared platforms, and support the trust to them.
BoJ’s Initiatives regarding FinTech

- Establishment of “FinTech Center” (Apr. 2016)
- Establishment of “FinTech Network” within BOJ
- FinTech Forums and Conferences
  - 2nd FinTech Forum (Nov. 2016) on Open Innovation
  - 3rd FinTech Forum (Feb. 2017) on Utilization of DLT in financial businesses
  - 4th FinTech Forum (Nov. 2017) on Big Data
  - 5th FinTech Forum (Feb. 2018) on Blockchain and DLT
  - Conference focusing on Artificial Intelligence (April 2017)
- Collaboration with Academia
  - Joint Conference held by the University of Tokyo and the Bank of Japan (Nov. 2016) “FinTech and the Future of Money”
- Many Research Papers on FinTech
- Frequent Speeches by BoJ Top Officials
On April 1, 2016, the BOJ established its “FinTech Center” in the Payment and Settlement Systems Department.

-From the Speech by Governor Kuroda “Payment Innovation and FinTech - The Central Bank’s Perspective -” (March 17)-

“To make the innovations in payments that are taking place due to innovations in information technology truly useful for the users of financial services and the economy, it is important to develop a network and win-win relationships with a wide range of entities beyond the traditional financial industry. The Bank, as the nation's central bank, is firmly committed to being a catalyst in fostering such developments. Moreover, I am pleased to announce that the Bank will soon establish a “FinTech Center” in its Payment and Settlement Systems Department. We aim to reinforce our efforts in which the new wave of FinTech will contribute to enhancing financial services and achieving sustainable growth of Japan’s economy. “

The Bank of Japan continues to play a catalytic role in payment innovation, where communication between wide-ranging entities (both banks and non-banks) is critical.
Establishment of the "FinTech Center“

April 1, 2016
Bank of Japan

The Bank of Japan today established the "FinTech Center" within its Payment and Settlement Systems Department. This is in line with the recent environment in which FinTech is gaining considerable attention as it applies new technologies - including those of information and communications - to innovative financial services.

The Bank aims to reinforce its efforts in which the developments of FinTech will contribute to enhancing financial services and achieving sustainable growth of Japan's economy.
Project Stella
- Joint Research Project on DLT by ECB and BOJ -

- The only initiative where major central banks (ECB and BOJ) collaborate on cross-border basis regarding DLT.

- Many central banks are also doing DLT experiments or researches (e.g. “Project Jasper” in Canada and “Project Ubin” in Singapore).

- Project Stella consists of cutting edge experiments such as applying “smart contract” functions of DLT in order to facilitate liquidity savings mechanisms (LSM).
ECB and the Bank of Japan launch a joint research project on distributed ledger technology

December 7, 2016
Payment and Settlement Systems Department
Bank of Japan

The Directorate General Market Infrastructure and Payments of the European Central Bank and the Payment and Settlement Systems Department of the Bank of Japan have agreed to launch a joint research project which studies the possible use of distributed ledger technology for market infrastructure. The project is expected to release its main findings next year.
Blockchain and DLT have potential to be useful infrastructure, especially when the chain of trust has to be established from scratch.

Nonetheless, if there is a fully-trusted entity, it would be appropriate to make full use of it.

**How should we design the best possible combination of centralized and de-centralized structures in order to create and maintain “trust”?**

*Central banks should be credible!*

*Central banks should be attentive to new technologies.*
Thank you for your attention!