

Studies Of Digital Fiat Currency Shifting To The 'How'

Much has been discussed with regards to a central bank issued digital currency, also known as digital fiat currency (DFC). Central banks around the world are realizing the need for a digitally issued fiat currency and its importance to a digital economy. The issuance of a digital fiat currency essentially extends a central bank's statutory requirement of issuing bank notes in the digital realm. Globally, ninety central banks are looking into the implications of a digital fiat currency.

The focuses of investigations are increasingly shifting from what and why, to how. Central banks need to identify the technology to be used for issuing DFC and evaluate different technologies and their implication from the user and operational aspects. Some central banks have studied distributed ledger technology identifying several challenges to be addressed. The Director of Technology of People's Bank of China said in an interview that whether blockchain is applicable for DFC depends on solving problems such as network security, business processing performance, transaction consistency etc.¹. Many central banks are studying other technological solutions as well.

Central Banks Evaluate Digital Fiat Currency

Bank of Canada (BoC) in November 2016 issued a paper² to explore how a central bank could issue its own digital fiat currency, examining such aspects as the design and characteristics of a DFC, the potential safety and efficiency improvement it could bring to the retail payment system, and the role of the central bank. The BoC's paper introduced a framework to evaluate digital fiat currency on the user experience, the system design attributes and the technical attributes. In the area of user experience and system design, Bank of Canada discussed how DFC's level of anonymity, limit on accounts, fees / rewards, interface, access device and distribution channels can influence the adoption of digital fiat currency, system efficiency, impact on payment business model as well as the legal requirements. In the technical aspects, Bank of Canada highlighted the importance of verification system, speed of settlement and reversibility and ecosystem management. It was mentioned that quick settlement of DFC will encourage adoption while a quicker settlement in blockchain technology could be a challenge to the stability of the system.

Sweden's Riksbank created the e-krona project earlier this year to examine impacts of a digital currency. The Deputy Governor of Sveriges Riksbank, Cecilia Skingsley, gave a speech on Riksbank's perspective on issuing its digital currency, e-krona³. In her speech, she highlights the importance of evaluating different technologies.

¹ Interview by People's Bank of China Director of Technology after their testing of Blockchain, China Securities News, January 27th, 2017 ([Relevant Sections Translated](#))

² Central Bank Digital Currencies: A Framework for Assessing Why and How (Staff Discussion Paper 2016-22), Bank of Canada, November 2016

³ Should the Riksbank issue e-krona?, Sveriges Riksbank, November 16th, 2016

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"Firstly, we need to identify what technologies can be used. This includes investigating both decentralised and centralised alternatives. It is important not to exclude alternatives in advance and thus limit the room for manoeuvre. ... We also need to study what technical competence we have, and what we need. We need to investigate in what way payments in e-krona can be initiated: with smartphones, plastic cards or in other ways."

Ms. Skingsley continued to mention that trust is a core component of currency, which makes money work in practice. People have to trust that the money they are using now will retain its value over time in order for the money to function as store of value, mean of payment and a unit of account. Similar to Bank of Canada, Riksbank has examined the role of the central bank in digital fiat currency as well as other operational aspects such as the distribution model and the requirements on legal and accounting policy.

Digital fiat currency is a payment instrument

Regardless of the technical merits of the various solutions, eCurrency believes there is one fundamental property for any such technological solution to possess. That is, the technology has to enable a central bank to issue digital fiat currency as a payment instrument that can be distributed and accessed by all electronic payment services transacted within the various electronic payment systems operated by government and private entities. A digital fiat currency that exists as a payment instrument is like the paper notes and coins that can be distributed via any channel and not tied to a specific payment system. In this case, the issuing authority does not need to build the entire retail payment infrastructure to transact with its payment instrument nor mandate the one payment system to be used by the payment service providers. Thus, the central bank can delineate its role as the currency issuer and regulator from the role of retail payment service owners or operators in the digital financial ecosystems.

Digital fiat currency, being a payment instrument, brings two important implications to the financial ecosystem. Firstly, all existing electronic payment applications, whether card-based applications or smart-phone based applications, and their infrastructures are preserved. The existing investments, business models, processes, user experience and customer relationships remain valid and usable. Secondly, electronic payment services such as e-money and e-wallet services interoperate on digital fiat currency as the common unit of account and legal tender. Inter-provider transactions are settled on digital fiat currency and without the need of subsequent settlement through bank accounts and central bank reserve accounts.

Digital fiat currency supplements physical currency and retains all essential characteristics and trust of a legal tender. It greatly enhances the efficiency and accelerates innovation in the financial services industry. Not only can digital fiat currency be deployed quickly leveraging the existing private sector investments, it also brings efficiency on settlement process.

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Central banks around the world are quickly realizing the need for a digitally issued fiat currency and its potential to improve efficiency in payment system, as evidenced by findings reported recently by Riksbank of Sweden and the Bank of Canada. It is now time for central banks to assess different technological solutions to issue its own Digital Fiat Currency.

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