A Symbiotic Crypto-fiat Economic system

Cryptocurrencies are fundamentally changing the nature of economic transactions in the world. They are also challenging the traditional power balance in a society where the dissemination of money is controlled by central authorities. Governments at all levels all over the world are unsure how to respond to this challenge, and responses vary from enthusiastic adoption to outright bans and crackdowns.

Ultimately, the effectiveness of a cryptocurrency will depend on successfully applying it to solve actual social needs and its adoption by the broader society. It is possible to create an economic system where crypto and fiat currencies not only coexist, but do so symbiotically, solving problems that cannot be solved by fiat currencies alone. For a crypto-fiat (CF) to augment or even replace fiat currency, it has to have a great user experience and has to be easily understood by the general population for adoption. It also needs to fit well into the general paradigm of most societies where majority of social and economic monetary activities are based on a commercial bank system.

Most major commercial banks worldwide have a large IT infrastructure, which, if integrated appropriately with blockchain technology to provide value added services for different types of scenarios, will reduce the costs of promoting and adopting a CF currency. Such integrations will obviously also provide better services to the general population.

Core differences between crypto and fiat currencies

Structure

Fiat currencies are centralized; there is a group of people and IT infrastructure that regulates the state of the transactions in the network. Cryptocurrencies are decentralized, and the regulations are made by the majority of the community.

Anonymity

Fiat currencies require user identification. You'll need to upload a photo of yourself and official documents issued by government authorities. Buying, investing and any other processes with cryptocurrencies do not need require any of that, although each transaction is registered, and the senders and the receivers are publicly known.

Transparency

Fiat currencies are not transparent. You cannot choose the address of a random account and see all its money transfers. This information is confidential. Cryptocurrencies are transparent. Everyone can see any transactions of any user, since all revenue streams are placed in a public chain.

Transaction manipulation

Fiat currencies have a central authority that deals with issues. It can cancel or freeze transactions upon the request of the participant or authorities or on suspicion of fraud or money-laundering. Cryptocurrencies are regulated by the community, and it is unlikely that a community will approve canceling/freezing transactions.

Legal aspects

Most countries have a legal framework for fiat currencies. The establishment of a legal framework for crypto currencies is mostly just starting off.

Designing a CF wallet

A strong and widely adopted CF currency will require some change management to alleviate the obvious shock to current banking systems. We think this shock can be minimized or eliminated by incorporating properties of cryptocurrency wallets into the existing banking system, so crypto and fiat versions of a "steady value" are managed under the same customer account. To follow the customer-centric strategy of commercial banks, cryptocurrency wallet ID fields could be added to the bank account to enable the account-based and wallet-based models to co-exist and operate at different layers. The CF wallet can be designed to require two private keys (held by the bank and the customer respectively) to create a transaction. The wallet acts like a safety deposit box and is not used in daily accounting or reconciliation processes. This will minimize the impact on the existing core banking infrastructure and processes.

The ownership verification of CF currency relies on the issuing bank's blockchain infrastructure. The wallet functions at the bank's end will be limited to providing security and integration into the underlying banking infrastructure. On the customer side, there will be significant more investment required to make the crypto-related properties more usable in different applications such as account usage and money transfer.CF currencies can be the liability of the issuing bank and does not need to be on the balance sheet of a bank providing the client account. This will keep the status quo of commercial banks because customers and their accounts will be

managed by them. Money transfers within and across borders, however, does not need to rely on traditional bank accounts and the ownership of digital currency can be verified directly by the issuing bank. A CF currency can be seamlessly exchanged from one form to another, and therefore peer-to-peer transactions can be done via the digital wallet component, managed directly by the customer. At the user end, the role of smart contracts can be played to the fullest and it would also become one of the core competitive advantages of the application service providers.

Benefits

The combination of traditional bank account and digital currency can significantly enhance the bank's KYC and AML capabilities. A typical scenario in many countries is the distribution of funds from a central authority to enterprises or individuals through multiple levels of government. We have first hand experience in how difficult it is currently to efficiently track distribution , as it relies on data reported by the local governments at various levels. Misappropriation, lack of compliance, and poor execution result in huge reconciliation errors between top level information and actual cash flows. With the traceability of CF currency and support from smart contracts, the central authority would be able to oversee the status centrally. This will prevent misappropriation and ensure usage for assigned purposes. And by using existing accounts, the user experience would remain the same so customers can enjoy digital currency service through existing channels such as bank counters, online banking and mobile banking.

In a digitalized world, the economic and financial implications of the digits should by no means be confused simply because they are presented in the same numeral form. The same digits may represent different types of assets — a notion that we should keep in mind when designing digital currency. In terms of the conversion of physical currency into M1 or M2, it's easy to distinguish between physical form and digital form. However, the digital M0 money supply may make people ignore such a distinction. Does the faster conversion between digital assets mean that the distinctions between different types of digital assets are disappearing? Fan Yifei, vice governor of PBoC, once wrote: "Digital fiat currency would certainly be influenced by [the] existing payment system and information technologies, but it should be distinguished from [the] current payment system so as to focus on service delivery and play its role in replacing traditional currency".

Theoretically, the payment system mainly deals with the portion of current deposits in "broad money", while the digital currency serves as part of M0 money supply. By incorporating digital currency attributes into the commercial bank account system, the DFC is integrated into the "central bank-commercial bank" system by leveraging existing financial infrastructure. More importantly, this approach takes into account the role of digital M0 in commercial banking

system and enables digital currency to either operate independently or run in an environment where bank account and digital wallet co-exist and operate at different layers. This approach ensures clear division of duties and clarifies roles of different parties, where the issuing banks are responsible only for digital currency itself, the account banks conduct specific business and the application service providers enable the realization of functions. With the adoption of other measures, for example collecting management fees (which practically means negative interest rate), the emergence of "narrow banking" would be less possible.

The incorporation of digital currency attributes is also an innovative step for the commercial bank account system. Commercial banks would be able to not only provide digital currency services based on existing infrastructure, but also explore new service models that leverage features of digital currency, which will enhance their service quality and competitiveness.