



Crypto-Currencies as Medium of Payment

With the current growth of the crypto-ecosystem in general, and the growth of crypto-currencies like BTC (Bitcoin Blockchain) and ETH (Ethereum Blockchain) in particular, the general public as well as traditional (old economy) markets finally take notice of blockchain technology and its application(s) in the financial technology and other sectors. A well-known obstacle to greater adoption of crypto-currencies like BTC as a **medium of payment** is the high volatility of its exchange value, due to its limited supply. As a consequence, the unit price varies (sometimes significantly) over short periods of time. This makes BTC unpractical for merchants that need to pay their suppliers in cash - especially in bearish markets where this currency risk can ruin a business.

Rising Demand for *Price-Stable* Crypto-Currencies

In the recent months, we have recognized an increasing demand for what is commonly referred to as “price-stable crypto-currencies” that promise to *peg* a particular underlying asset, for instance to a fiat currency such as the U.S. Dollar. As a consequence to pegging to a fiat currency and due to monetary policy, *price-stable* crypto-currencies are **not stable in value**, but rather stable in their pricing relation to the fiat currency in question. The difference becomes clear when looking (for instance) at the [monetary basis of the U.S. Dollar](#).

Most price-stable crypto currencies are denoted in U.S. Dollar, such as NuBits, MakerDAO/Sai, bitUSD and USDT (Tether). Additionally, some crypto-currencies try to mimic the value of other assets, for instance MakerDAO/Dai (special drawing rights), bitGOLD (Gold), Digix Gold Tokens/DGX (Gold), bitSILVER (Silver), and others.

Either way, being based on blockchain technologies, these particular crypto-currencies come amongst other benefits with all the nice features of blockchains, such as fast confirmations, international transfers and cheap fees. They reduce currency-risk for merchants. Additionally, these *price-stable* currencies provide an interesting instrument to professional traders that need a hedge and seek for the stability of fiat in bearish markets.

The concepts

Currently, three concepts exist to maintain a *peg*:

1. Asset-backed Peg

An asset-backed crypto-currency is issued as a so called “I owe you” (IOU). IOUs, serve as an informal acknowledgment of a deposit. One can think of them as deposit receipts where the physical asset is in escrow by the issuer of the IOU. This allows for constructions where companies store real U.S. Dollars in their bank account and sell digital IOUs that can be used to reclaim the underlying physical asset (the Dollar) at (or close to) parity.

For obvious reasons, the IOU should always be denoted in the asset that serves as backing. Fiat-denominated IOUs have a long history in the crypto space. Ripple launched in 2012 with its host of fiat *gateways* (any entity can issue their own USD-IOU). Another, USDT, is issued

by Tether and began circulating in 2014.

However, the issue with IOUs in general is trust and confidence in the redeemability of the underlying physical asset. Additionally, market participants should demand for transparency and proof of full reserve in the case of asset-backed price-stable currency. It is always worthwhile to read the fine-print and do proper due diligence.

2. Liquidity-backed Peg

A more or less familiar approach is the liquidity-backed peg where specialized market makers (or custodians) earn revenue for providing liquidity at the desired market-price.

This approach has been chosen by NuBits and was fairly successful. NuBits can be created in any amount at any time after approval of a group of investors. The new NuBits are then given to a custodian who is trusted to run a market bot designed to keep the peg tight. Additionally, the group of investors votes on an interest rate that will be paid to NuBits holders who volunteer to park their NuBits for a defined period of time. The interest is paid by issuing new NuBits.

This approach closely mimics the approach of the U.S. Federal Reserve, implemented on a blockchain and executed by automated bots that are operated by custodians.

The difference to asset-backed IOUs is that the asset that backs the **price-stable** currency is denoted in a different currency (in case of NuBits, the backing asset is BTC). Thus, the operator has a currency-risk and needs to take additional efforts to ensure full-reserve.

Similar to asset-backed currencies, the challenge is to earn sufficient trust and confidence in the redeemability of the liquidity-backed asset. Different from asset-backed currencies, the transparency is much more important due to the currency-risk introduced by the fact that the backing asset has a different denomination.

3. Market-backed Peg

Market-backed Pegs on the blockchain have been first introduced by BitShares and are used as *market-pegged assets* (also known as BitAssets and Smartcoins).

The concept goes beyond simply creating an alternative currency, it creates a decentralized, public and thus transparently accountable, fully collateralized lending platform for almost every possible commodity. Examples are bitUSD which corresponds to 1 U.S. Dollar, and bitCNY which corresponds to the 1 Renminbi Yuan.

The idea is rather simple: A part of a market-pegged asset is a so called *collateralized loan* that can be obtained from “*the bank*” at any time as long as sufficient collateral is provided and handed over to “*the bank*” to secure the loan. In the case of BitShares, “*the bank*” is not a brick and mortar entity, but an autonomously run **application** on the blockchain (some call this a **smart contract**). Thus, “*the bank*” operates on a public ledger, is fully transparent and comes with no counter-party risk (since the counter-party is implemented in open source software). Some call such a platform **trust-free**, which means that no trust in any third-party is required, other than in the open source software.

With bitUSD and bitCNY, participants can obtain a crypto-currency that is collateralized by at least 175% of its value and thus have a lower risk of default, especially as the system grows.

In contrast to the other pegging mechanisms, there is no central entity that tries to support or enforce *the peg* but rather an auditable open source contract **that autonomously executes** and that offers incentive for market participants to closely track the valuation of the underlying asset. However, since the collateral is BTS and thus not denominated in either U.S. Dollar, nor in Yuan, each market-pegged asset has its own currency-risk. The BitShares

Whitepaper explains the three mechanisms in detail that ensure confidence and redeemability, namely, margin calls, settlements and the right for a debt-to-equity swap in the case of under-collateralization.

Conclusion

Both asset-backed and liquidity-backed assets have their justification, even though they require a trusted third-party. However, one of the fundamental aspects in blockchain technologies and crypto-currencies, namely, its autonomy and independency, is not accomplished.

On the other hand, a market-backed peg, or BitAsset, on a decentralized and transparently accountable lending platform, is able to realize a *price-stable* crypto-currency that is in full agreement with the spirit of a decentralized autonomous economy.

The BitShares Blockchain Foundation acknowledges this fact and would like to significantly support the growth of these assets since, to us, their market mechanics are sound and solve many real-world problems, such as international remittance. Thus, we would like to offer legal and technical assistance to anyone when offering and implementing, or simply using BitAssets, such as bitUSD, bitCNY, or bitEUR.

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BitShares Blockchain Foundation
spokesperson@blockchain.foundation

Stichting BitShares Blockchain Foundation
Zutphenseweg 6
7418 AJ Deventer
The Netherlands
Registration: KVK-66190169
<http://bitshares.foundation>

Official Public Face and sole Spokesperson of the BitShares Blockchain [{more}](#)