Cryptocommodities

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The purpose of this document is to explain the implementation and purpose of a cryptocommodity. This document will explain what a cryptocommodity is and outline the necessary considerations for a functional ecosystem. The ecosystem is intended to support a single type of cryptocommodity using a predefined underlying resource. This ecosystem is designed to be replicable to enable expansion and reusability for other underlying resource quantities and types.

Regulatory or legal structure is beyond the scope of this document. Elements of a cryptocommodity implementation will likely reach beyond a single territory so regulatory and legal structures are based on the jurisdiction of the deployment logistics.

This document is intended to be “resource-neutral”, meaning that knowing the nature of the underlying resource used in the creation of the cryptocommodity is not required for understanding the information presented.

This document is “platform-neutral” with regard to technology solutions. The technology platform options are specific to deployment logistics and are not necessary for understanding the information presented.

The examples provided contain elements that are interchangeable. Parts that are specific to cryptocurrency deployment are also replicable and potentially interchangeable.

Problem

The functional decentralized equivalent of all financial tools do not exist. Lack of these instruments is a significant contributor to the overall volatility of cryptocurrency markets. Solutions to fill these gaps are needed to forge a viable, global digital economy.

Complete economic functionality is the result of many different financial instruments that interact with many complex inputs and outputs. A decentralized economy, that serves the needs of all, requires successful integration of many types of values and their unimpeded exchange.

A “stable cryptocurrency” is a highly valuable digital asset.

A viable “stable cryptocurrency” is very difficult to maintain.

An algorithmic approach to a viable stable cryptocurrency is beyond the scope of this document but its existence is acknowledged. At the time of writing this document, viable, long-term, purely algorithmic solutions are not yet available nor easily, if ever, attainable, without the cryptocommodities described in this document.

Beyond hypothetical or non-existent solutions, there are two basic approaches to the creation of a cryptocurrency with a stable value. Both of these methods involve equating the value of a cryptocurrency to a known or external constant value, also known as “pegging”.

If a “real-dollar” is the external constant value for use in an example of a “stable cryptocurrency”, then an equal number of real-dollars must be in reserve to represent the crypto-dollars in circulation for the crypto-dollars to be properly pegged. It must also be established that the crypto-dollars will be honoured in exchange for real-dollars. The honouring of the exchange is assumed to accompany the reserve so the reserve must be completely collateralized and always available.

This exchange at the fixed ratio of one real-dollar to one crypto-dollar must be maintained for the stability to exist. If this exchange fails then the liquidity of the “stable coin” fails and it loses its viability. Without viability the coin has no value.

Maintaining price stability is resource intensive and requires either:

A. Unlimited capital

or

B. Complete collateral

Option A is unrealistic and operates based on principles that contribute to centralization.

Option B requires participation incentives.

An ecosystem supporting a stable coin value requires resources to maintain. Ongoing support for this type of system is not possible without proper incentives. The exchange ratio of the crypto-dollar to real-dollar does not offer enough profit potential to generate viable participation.

Real-dollars used for collateral, accumulated for a cost below those used in exchange, could create incentive but a consistent supply of discounted real-dollars is unrealistic.

Solution

If the incentives to create a collateralized reserve can be realized then the creation of a stable cryptocurrency becomes possible. Cryptocommodities present the best option for the creation of a cryptocurrency with a collateralized reserve.

As the basis for stabilized cryptocurrency value, cryptocommodities create unique opportunities and new incentives that lead to viability.

Potential incentives:

- Market Growth
- Value Storage
- Predictable Trade
- Production Exploration
- Service Provisions

Cryptocommodity deployment requires special considerations directly related to the underlying resource. These considerations create opportunities that benefit the economy of the cryptocommodity as well as creating broader economic functions.

Viability can be structured using incentives over capital expenditures. This encourages decentralization for the benefit of market expansion. Inefficiencies can be optimized and efficiencies can be leveraged. The incentives provided by the opportunities create motivated participants and a viable stable cryptocurrency.

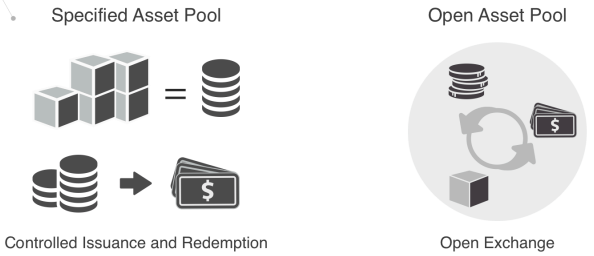
Asset-Based Cryptocurrencies as Cryptocommodities

A Cryptocommodity is a specialized deployment of an Asset-Based Cryptocurrency. An Asset-*Based* Cryptocurrency is different from an Asset-*Backed* Cryptocurrency.

The application and structure of a “backed” cryptocurrency is beyond the scope of this document aside from the following clarification:

A cryptocurrency that is “backed” by an underlying resource is the creation of a tokenized representation of the asset as divided by the token quantity; coins or tokens are used to represent “shares” of an asset pool.

A cryptocurrency that is “based” on an underlying resource is a cryptocurrency where a coin or token is representative of a quantity of a specific underlying resource. This fine difference is a significant distinguisher when examined from a deployment and economic perspective.



The Three Pillars of a Viable Cryptocommodity

The Three Pillars of a Viable Cryptocurrency and cryptocommodity are the same: Technology, Community and Liquidity.[1] Each group is independent but interrelated. All groups are necessary and the limitations of any group result in limitations of the overall economy. As long as all three pillars are in place the cryptocommodity is viable.

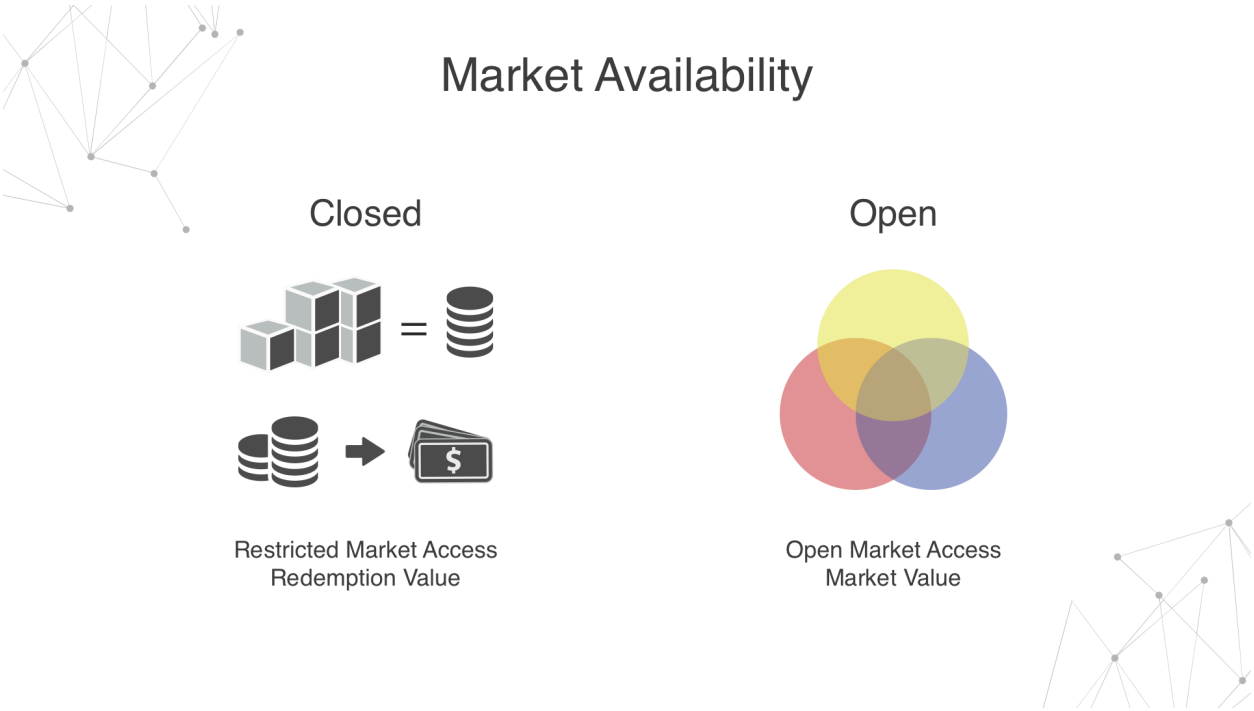
A cryptocommodity is deployed as an Asset-Based Cryptocurrency (ABC)[2]. An ABC requires all of the quintessential elements of a viable cryptocurrency.

[1] The Three Pillars of a Viable Cryptocurrency - https://medium.com/coineer/the-three-pillars-of-digital-money-viability-385ab571469c

[2] The WealthTECH Book, Chapter 5 - https://thewealthtechbook.com/authors.html#Part_5

The ABC, as a cryptocommodity, is specialized by exchanges and merchants. Merchants have options for integration into exchanges and API elements but they are also “resource exchange providers”. These providers directly exchange the underlying asset for the digital asset. The interaction between merchants and exchanges has additional extended economic effects.

A cryptocommodity is a cryptocurrency based on an underlying resource. As a cryptocurrency it must maintain all three pillars to be viable. As a cryptocommodity there are elements of the economy that are tied to the nature of the underlying resource. Combining the elements of a viable cryptocurrency with the benefits of an underlying resource creates better market availability.



Technology

The technology must serve the needs of the supporting community. The immediate technology needs of the community are the reliable and secure exchange of the digital asset. The transactional nature of the system is the core functionality requirement.

For a cryptocommodity, the technology enables the secure exchange of the digital representation of the underlying resource. The coins issued for use are based on the availability of the underlying resource type. The coin and resource supply correlation is established in the initial deployment of the cryptocurrency network. Consideration for the supply of the underlying resource through Resource Exchange Providers is necessary for establishing viability. Since the quantity of coins issued are equated to a

quantity of the underlying resource, the initial quantity and emission rates are additional factors to be weighed for viability.

Community

The community supporting a cryptocommodity is quantifiable and strategically accessible. Supporting members of the community for a cryptocommodity include:

- End-users
- Resource producers
- Market speculators
- Ideology supporters

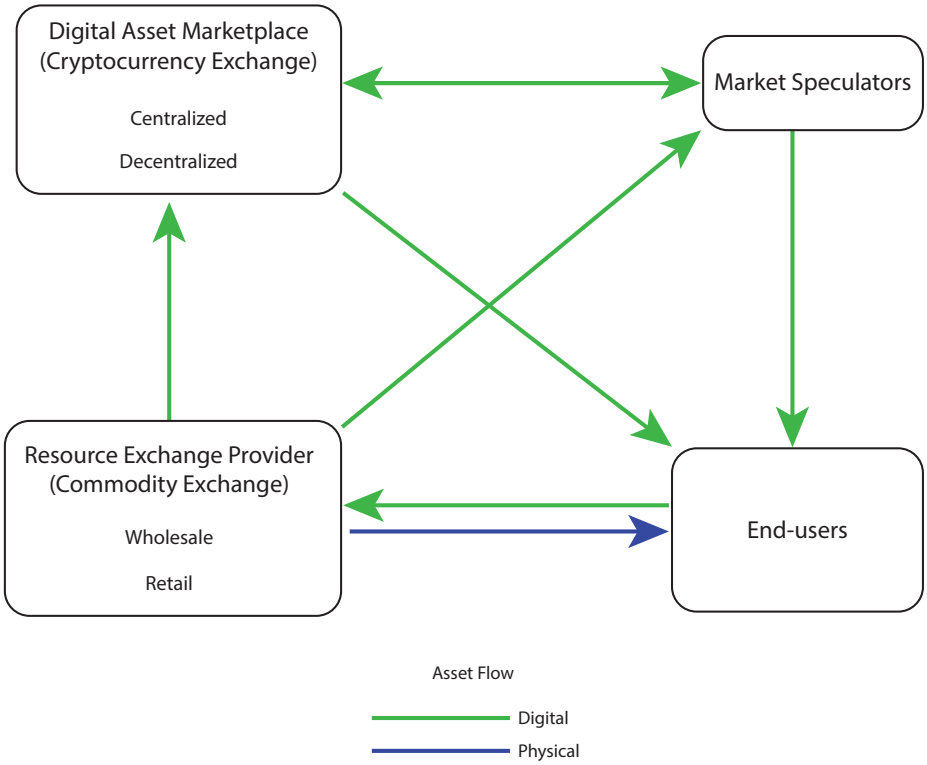
Other community supporters emerge in the deployment of any cryptocurrency but these specific groups can be accommodated to achieve maximum viability. Access to target groups and awareness measurements offer familiar metrics for guidance in execution success.

The transactional nature of the cryptocurrency combined with the direct exchange of the underlying resources can evolve new forms of tracking and accountability. Cryptocurrency network transactions offer varied levels of accountability and traceability that make supply chain visibility more immediate.

Liquidity

It is assumed that the cryptocommodity, because of the underlying cryptocurrency technology, will be eligible for trade in centralized and decentralized cryptocurrency exchange systems. Since the cryptocommodity uses cryptocurrency technology for transactions the capability for tamperproof digital trade exists by default.

Cryptocurrency technology enables the open exchange of digital assets. So long as the underlying resource can be exchanged for the digital asset there exists liquidity.



Cryptocommodities are pegged to the value of the underlying resource so value can be underwritten with more analysis options and better predictability.

The decentralized nature of cryptocurrency exchange combined with production optimizations and direct exchange of the underlying asset create market opportunities that are distinct and significant.

Resource Exchange Provider - a.k.a. “Points of Redemption” or “Redemption Points”

A Resource Exchange Provider (REP) is an entity that provides asset quantities directly in exchange for the cryptocurrency.

A REP is a special exchanger of the underlying resource who is committed to the trade of assets for the cryptocurrency based on quantities of the underlying resource. A REP has the unique opportunity of contributing directly to the control of the supply of the cryptocurrency used within the network. A REP is able to directly track the supply of the cryptocurrency and its velocity using standard tools including block explorers and other API implementations for deeper insight.

Hypercollateralization - Mutual Asset Backing

This is an example of a cryptocommodity with mutual asset backing that can lead to availability of more of the underlying resource than is represented by the digital asset. This means there is more collateral than required to support the digital asset; hypercollateralization.

A cryptocurrency is issued representing 1000 units of Resource A. There are now 1000 cryptocurrency coins to be worth 1 unit of Resource A each. The supply of coins are issued by an entity with an interest in the initiation of the economy.

Steve is a profitable jellybean merchant with a pile of jellybeans. Steve creates a cryptocurrency called SteveCoin.

With 1000 cryptocurrency coins available, their value is supported by the underlying resources available for exchange. If the quantity of available underlying assets changes, recalculating the value of the associated digital asset becomes more predictable. If the initial provider no longer has the supply of 1000 units available then the value of the digital asset will need to adjust according to the available supply for exchange. Adjustments must meet availability requirements or risk losing viability.

A Resource Exchange Provider (Provider 1) makes available their own supply of 1000 units of Resource A in exchange for 1 coin per unit of Resource A.

Steve wants to increase access to his jellybeans so he starts to make the SteveCoins available to people. Steve declares that he will honour the exchange of each SteveCoin for one of the jellybeans he has in his pile. He offers a discounted price for jellybeans exchanged for SteveCoins when compared to using local currency. Steve has a pile of 1000 jellybeans he has dedicated to trading for SteveCoins.

End-users buy coins and exchange them with Provider 1 for units of Resource A. Some end-users strictly use the coins to barter for other goods and services knowing their associative value. Provider 1 sells the coins back to the open market when they have more units of Resource A available for exchange.

Sometimes Steve receives a request to trade a SteveCoin for a jellybean and he gladly accepts. Knowing the benefits of cryptocurrency, Steve is able to create extra value. Knowledge of SteveCoin and the value it holds against a jellybean spreads and soon others become interested. There are people who think one cookie is worth five jellybeans so they independently trade five SteveCoins per cookie knowing they can trade the SteveCoins at anytime for jellybeans.

Another Resource Exchange Provider, Provider 2, wants to benefit from the exchange of the coin. They only have 100 units of Resource A but make them available for exchange with the coins.

Lynne, who is not as fond of jellybeans as Steve, has her own supply of 100 jellybeans. She decides she would like to benefit from the use of SteveCoins to sell her jellybeans. She now makes her supply of jellybeans available in exchange for SteveCoins hoping to generate interest in her jellybeans from the new awareness created by interested cookie traders and SteveCoin buyers. People now start exchanging SteveCoins for Lynne's jellybeans in addition to having the option of trading them to Steve for his original supply. Additionally, a separate market has developed where there is an exchange of cookies based on the value of jellybeans. Cookie traders are now able to buy and sell different kinds of cookies, not just for local currency, but also for SteveCoins based on their value in jellybeans.

Overall the cryptocommodity economy is now supported by 1100 units of Resource A: 1000 units of Resource A from Provider 1 PLUS 100 units of Resource A from Provider 2. So long as the Resource Exchange Providers enable the exchange, the cryptocommodity has more collateral to support the supply of the digital asset. If another provider from another region or other differentiator decides to also make their supply available for exchange, further benefits are realized.

Xavier works at a jellybean factory and has his own supply of 2000 jellybeans that he would like to make available for exchange. Xavier is in a position to support the SteveCoin economy. He can also potentially influence the value of the SteveCoins in the market but this would directly impact the community who supports the SteveCoins. If both Steve and Lynne can no longer support SteveCoins then those who also supported the exchange of SteveCoins, with Steve and Lynne's jellybeans, may no longer support SteveCoins at all. If Xavier fails to maintain support for the economy of SteveCoin and its value against a jellybean then the viability of the coin could be lost.

When more assets are available than the original digital asset issuance, the cryptocommodity is hypercollateralized. A hypercollateralized cryptocommodity still provides more stability and price predictability than any other cryptocurrency even if the value is adversely affected.

Hypercollateralization through Mutual Asset Backing is a unique capability of cryptocommodities.

Valuation Analysis

The value of a cryptocommodity is related to existing market and product availability. These are based on the options for exchange including both physical and digital forms. The market value of the digital asset is also attributed to conditions surrounding the availability of the underlying resource.

The value of the cryptocommodity coin is affected by:

- quantity of coins available
- quantity of resource available in proportion to coins available
- market demand for resource available
- market conditions surrounding coin

A cyclical commodity is one that has seasons or cycles of production. This can include pre-sale of product and cover regional production. Supply availability and price correlation can be mitigated and reconciled more efficiently through open markets.

If the underlying resource can be exchanged for the digital asset at a difference relative to other market valuations then potential for market stabilization surfaces. Inefficiencies can be reduced through open access to exchange. Value deltas represent opportunities for participants.

Using familiar metrics and models it is possible to position a cryptocommodity for uses where other cryptocurrencies are not suited. Cryptocommodities are a way of opening new markets to the benefits of cryptocurrency while mitigating risk.

Cryptocommodities create reference values within a decentralized economy. Cryptocommodities offer many advantages within the cryptocurrency economy. Since the attributes of a cryptocommodity are more reasonably evaluated, risk for capitalization is reduced.

Summary

Cryptocommodities offer the best implementation options for creating stable cryptocurrencies with a collateralized reserve. There can exist many different cryptocommodities that follow similar implementation strategies.

Cryptocommodity implementation requires:

- Deployment of a dedicated viable cryptocurrency
- Support infrastructure for the underlying resource
- Standardized exchange of the digital and physical assets

Cryptocommodities are a vital component for the functionality of a decentralized economy. Cryptocommodities create opportunities on both micro and macro scales. Cryptocommodity deployment is strategic, quantifiable and one of the best methods for the creation of a highly valuable digital asset.

AUG2018