GAUGECASH: A DECENTRALIZED MONETARY SYSTEM

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Abstract. The need for an inflation-proof medium of exchange/store of value has never been more evident than in recent times. The world economy is unraveling what might be one of the most complex crises on a global scale in recorded history. Cryptocurrencies have been tested during these times, and their inherent value has shined, outperforming most traditional assets. Nonetheless, the volatility present in most cryptocurrencies still hinders their usefulness as a medium of exchange.

The search for the best way to stabilize cryptocurrencies has been on the agenda of many of the best minds in the industry, giving rise to a thriving ecosystem. Yet mainstream adoption is still far away. In this Paper, we outline what we consider a stable DeFi World Currency that can compete with USD, EUR in any Wealth and Cash Markets, digital asset-backed, peer to peer stable cash system, that caters incentives to the sophisticated long term crypto asset investor and simultaneously provides the average layperson/corporation a stable cryptocurrency delivered via a highly intuitive multi-platform interface that seamlessly integrates cutting edge technology in its UI, available to anyone, anywhere, for free.

1.Introduction

Bitcoin was the first electronic peer to peer cash system implemented without the necessity of going through a financial institution.

From the Bitcoin Paper, he wrote:

> *"What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this Paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions. The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes."* **[1]**

The solution to the double-spending problem was successfully deployed, and by 2020, Bitcoin is still the largest blockchain with the highest Market Cap.

The economic property that Satoshi decided to give the cash system value was Scarcity. Today there are 18.2M BTC in circulation; this is more than 85% of the total mined BTC that will ever be available.

Bitcoin still shies under the EUR and USD currencies on the daily amount traded. The volume of the EUR/USD pair in the Forex Market is around 4 Trillion per day. The paper cash daily market worldwide should be about 20 Trillion USD. The max volume by BTC in one day hasn't reached yet 60 Billion.

As you can easily depict from this data, the potential Market for a stable electronic peer to peer cash system solving the double-spending problem plus volatility without any financial institution intervention is still a 1Trillion Value Venture.

Tether and Etherum started their development around the same time: 2014-2015. Tether saw the potential of a stable coin based on blockchain technology. From their White Paper, you can read this:

> *"We believe the Bitcoin blockchain is a better technology for transacting, storing, and accounting for these assets. Most estimates measure global wealth around 250 trillion dollars, with much of that being held by banks or similar financial institutions. The migration of these assets onto the Bitcoin blockchain represents a proportionally large opportunity.*
>
> *Bitcoin was created as "an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.". Bitcoin created a new class of digital currency, a decentralized digital currency or cryptocurrency1.*
>
> *Some of the primary advantages of cryptocurrencies are: low transaction costs, international borderless transferability and convertibility, trustless ownership and exchange, pseudo anonymity, real time transparency, and immunity from legacy banking system problems. Common explanations for the current limited mainstream use of cryptocurrencies include: volatile price swings, inadequate mass market understanding of the technology, and insufficient ease of use for nontechnical users."* **[2]**

Tether is still the largest stable coin traded with a daily volume average of around 50 Billion by the end of 2019 and the ongoing 2020. The problem with Tether is that it is backed up by traditional bank accounts, which, at the end, relies on trusting traditional financial institutions. We believe it's a poor solution compared to the colossal accomplishments of Bitcoin and Ethereum, which we will talk about next.

Ethereum, as we mentioned before, was in its infancy when Tether was already being implemented using the Bitcoin Omni and Liquid Protocol. It was probably the best tech at the time, but Ethereum came along to be the first decentralized computer and surpass Bitcoin's tech by far. His founder, Vitalik Buterin, wrote:

> *"What Ethereum intends to provide is a blockchain with a built-in fully fledged Turing-complete programming language that can be used to create "contracts" that can be used to encode arbitrary state transition functions, allowing users to create any of the systems described above, as well as many others that we have not yet imagined, simply by writing up the logic in a few lines of code."* **[3]**

They officially became the first successful decentralized world computer, and by today they hold the second-largest Crypto asset Market Cap. Today there are other projects on the hunt for Ethereum to conquer the Market with better tech and scalability.

On the other hand, Vitalik saw a far more advanced way of solving a peer to peer cash system's volatility issue since the writings of his original Paper that hasn't come to the Market yet:

> ***"Financial derivatives and Stable-Value Currencies"***
>
> *"Financial derivatives are the most common application of a "smart contract", and one of the simplest to implement in code. The main challenge in implementing financial contracts is that the majority of them require reference to an external price ticker; for example, a very desirable application is a smart contract that hedges against the volatility of ether (or another cryptocurrency) with respect to the US dollar, but doing this requires the contract to know what the value of ETH/USD is.*
>
> *The simplest way to do this is through a "data feed" contract maintained by a specific party (eg. NASDAQ) designed so that that party has the ability to update the contract as needed, and providing an interface that allows other contracts to send a message to that contract and get back a response that provides the price.*
>
> *Given that critical ingredient, the hedging contract would look as follows:*
> *Wait for party A to input 1000 ether.*
> *Wait for party B to input 1000 ether.*
> *Record the USD value of 1000 ether, calculated by querying the data feed contract, in storage, say this is \$x.*
> *After 30 days, allow A or B to "reactivate" the contract in order to send \$x worth of ether (calculated by querying the data feed contract again to get the new price) to A and the rest to B.*
>
> *Such a contract would have significant potential in crypto-commerce. One of the main problems cited about cryptocurrency is the fact that it's volatile; although many users and merchants may want the security and convenience of dealing with cryptographic assets, they may not wish to face that prospect of losing 23% of the value of their funds in a single day.*

Up until now, the most commonly proposed solution has been issuer-backed assets; the idea is that an issuer creates a sub-currency in which they have the right to issue and revoke units, and provide one unit of the currency to anyone who provides them (offline) with one unit of a specified underlying asset (eg. gold, USD). The issuer then promises to provide one unit of the underlying asset to anyone who sends back one unit of the crypto-asset. This mechanism allows any non-cryptographic asset to be "uplifted" into a cryptographic asset, provided that the issuer can be trusted.

In practice, however, issuers are not always trustworthy, and in some cases, the banking infrastructure is too weak, or too hostile, for such services to exist. Financial derivatives provide an alternative. Here, instead of a single issuer providing the funds to back up an asset, a decentralized market of speculators, betting that the price of a cryptographic reference asset (eg. ETH) will go up, plays that role.

Unlike issuers, speculators have no option to default on their side of the bargain because the hedging contract holds their funds in escrow. Note that this approach is not fully decentralized, because a trusted source is still needed to provide the price ticker, although arguably even still this is a massive improvement in terms of reducing infrastructure requirements (unlike being an issuer, issuing a price feed requires no licenses and can likely be categorized as free speech) and reducing the potential for fraud." **[4]**

We've taken this approach, and we have come up with an elegant solution. We will be able to provide a stable peer to peer cash system available to anyone anywhere based on the best blockchain tech available and putting the backup trust in the economic properties of either one or several crypto assets. In other words, you will not need to trust any financial institution for the protocol to hold.

2. Stability of Fiat Currencies.

What we call stability of a fiat currency comes from monetary policy, the powers behind it, and the open Market that decides its value. The Euro and the USD are taken by the world as modern reserve currencies by the Central Banks of several countries. The fractional reserve banking system plus credit and debt have been the primary mechanisms for building trust in fiat currencies' economies. The last century's financial history has shown that this model has been far from perfect but has been the most successful in bringing prosperity to the world.

In the last century-plus, there have been around thirty "Non-Domestic Currency Debt Crisis (typically inflationary deleveragings)," causing millions of people to lose their wealth and transactional value. Recent devaluation hits have occurred in Venezuela, Argentina, Mexico, and Brazil. In 2020, due to the pandemic and the inability of most Governments to adapt, countries around the world have jeopardized their citizens' store of value, AGAIN.

We have created an Index coming from the Final Market Making of the Forex Market to solve the problem of volatility and wealth preservation on the peer to peer cash system space. We have backed up the value of what we will now call the GAUGECASH (GAUsC) by the blockchain class in itself, taking advantage of its economic scarcity property, making the solution truly DeFi and trustworthy.

3. The GAUGECASH Solution.

The price of the GAU is an index of world currencies that contains WorldWide Monetary Policy. This means the relationship towards its purchase power will be the best in existence. The stream of data of the Index comes from the final market making of the Forex market.

The mathematical formulation* of the Index brings two exciting innovations.

One, if any major fiat currency collapses in the future, meaning severe depreciation phases or even becoming of no value at all, the Index will converge to an even more stable value giving true and public certainty of its stability.

Second. Testing the Index's behavior in the last two decades, we can demonstrate that it outperforms any other fiat currency's stability in the world.**

*We will not disclose the Index Math at this point.
**We will make available the Index behavior back in history as far as we can.

4. Backing up the GAUGECASH.

Instead of going backward, we believe in going forward by trusting the **blockchain asset class.**

Let us take the Bitcoin blockchain as an example. The global GDP given by the World Bank is in the ballpark of 90 Trillion USD by 2020. If you throw the GDP's total value into the Bitcoin Blockchain, its Market Cap will become 90 Trillion USD. One bitcoin will be worth 4.5 M USD and one Satoshi .45 USD cents.

Therefore bitcoin's volatility would end, and its only purpose would be the one that his creator proposed, "an electronic peer-to-peer cash system."

After understanding the technology behind bitcoin, the world has unleashed a series of projects never possible before. In 2015, Ethereum became the first decentralized computer. In 2019, Libra, Facebook's blockchain, and stable Coin projects were released. A competitive market is on the rise with new currencies, new blockchains, new Dapps.

Still, the world hasn't seen the best stable coin using blockchain's best tech available, backed up by the **"blockchain asset class"** itself…

The GaugeCash protocol will make it happen.

5. Issuance Model

We want to demonstrate that we can create a self-reinforcing economic system creating a peer-to-peer stable cash system free to the word using blockchain technology and its properties. We will do an IEO of a token that we have named the GAUGEFIELD (GAUsF). The total issuance of the GAUGEFIELD will be 500,000,000.GAUsF.

We will do three rounds of issuance.

1. We will issue 100,000,000 GAUsF at 0.0025 LINK, ASAP we will release the GAUGECASH service for the world to use.
2. We will issue a second round of 100,000,000 GAUsF at 0.1 LINK. At this point, we will issue half of the Value on GAUGECASH to demonstrate that the solution will hold over time with data in real-time.
3. People will be able to mint GAUsC above 50M as a storage of value or for buying goods and services if they already trust the protocol.
4. We will do a third issuance of 100,000,000 GAUsF at 1.0 LINK.

6. Token Economics.

On the one hand, what we are proposing is quite simple. If you have a scarce asset, and there is more demand than supply for it, the value of the scarce asset will go up. On the other hand, what is not so easy is to tune the equilibrium of those two variables, but the good news is that we can calculate it quite rapidly once we start. And we can build a yield on the venture going forward. This is precisely what we want, to allow DeFi investors to profit big from the demand of a DeFi Stable Peer to Peer Cash system available to anyone anywhere globally.

The growth in value of the GAUGEFIELD depends on the market adoption to store value and buy goods/services with the GAUGECASH. We genuinely believe that there is a real chance of conquering ⅕ of the Total Cash Market in the world for the next five years. This has never been measured in a DeFi way, but we can approximate the value of this Market.

If we take World GDP and round it up to 90TUSD today, the Market Size looks as follows:
90TUSD GDP/5 = 18TUSD.

Then, let us take the concept of velocity described succinctly by the Federal Reserve Bank of St. Louis:

> *"The velocity of money is the frequency at which one unit of currency is used to purchase domestically-produced goods and services within a given time period. In other words, it is the number of times one dollar is spent to buy goods and services per unit of time. If the velocity of money is increasing, then more transactions are occurring between individuals in an economy.*
>
> *The velocity of money is calculated by dividing GDP for a certain period by the total money supply. For example, if the GDP is $20 trillion, but there are only $5 trillion worth of dollars available, then that money needs to turn over four times, or have a velocity of four, in order to meet demand in any given year. Currently, the velocity of the USD is a little north of 5".* **[5]**

If we divide 18TUSD by 5 again, we would need **3.6TUSD** of GAUs available to cover the demand of that Market.

Another measurement is the Wealth Market given by "The Global wealth report 2019" by Credit-Suisse. One-fifth of that Market is the astronomical amount of **72TUSD** that the GAUGECASH needs to serve.

7. Yield Approximation.

Some in the Crypto Community see Bitcoin as a store of value. But people who believe this is the new gold reserve are mistaken if they do not consider miners' incentives. "There is a declining block subsidy, and Bitcoin itself will need to find a way to replace this subsidy in order to sustain the mining participants involved." (Krysty Leigh, CTO, Core Scientific).

The average Volume/MarketCap ratio for Bitcoin in 2020 is 19.63% (Until October 2, 2020). Meaning 80% of BTC is not transacted/day. Tether, on the other hand, has a ratio of 625% for 2020 (Until October 2, 2020), meaning that it has a velocity of money of 6/per day, which means people used it on average 4 hours a day. Which is negligible compared to USD velocity 5/per year and EUR less than 2/per year.

So if we start a price of the GAUsF at 100,000,000 =0.001 USD and the Total issuance is 500,000,000 the yield would be equal to:
36,000,000%. (18TUSD/500MGausF=36,000 ; (36,000-.001)/.001=35,999,999.).

8. High-Level Road Map.

We are blockchain agnostic. The implementation of the GAUGECASH as a free service to the world will always take into consideration the best technology possible at any given time based on these principles.

1. **Decentralization Incentives.**
2. **Scalability.**
3. **Speed.**
4. **Ease of Use.**
5. **Security.**
6. **Economically Sound.**
7. **Idea Meritocracy.**

At this point, we believe that *Chainlink*, specifically its native economic system LINK, makes sense to ground up the first implementation of the GAUGECASH.

Going Forward, we will do thorough research on *https://polkadot.network*, *https://solana.com*, *https://www.avalabs.org*, etc.

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