

GOLD BACKED
STABLECOIN

GUS

Abstract

Stable coins have clearly demonstrated a greater reaching utility than cryptocurrencies to date. Cryptocurrencies being highly volatile are limited to use exclusively on their native platform. A cryptocurrency with fixed stable value allows much wider usage as a store of value and medium of transfer, which results in both high demand and high utility. Existing stable coins however all share the same weaknesses.

Fiat

Obscured trust

Bank dependence

Centralised architecture

International regulatory barriers

Asset-backed token holders in the market can take advantage of blockchain technology, together with embedded consensus systems, to transact in familiar, less volatile assets. In this paper, we present mechanisms stating why such a coin should be implemented at a rate pegged to a fiat currency first and a basket of assets later, practicing off-chain external collateral that has been tokenized by a variety of issuers. With the arbitrary increase or decrease in demand, this design considers a careful balance between stability, decentralization, and profitability. Having these reasons, we believe GUS to be an ideal financial building block for the blockchain ecosystem and a reliable alternative to fiat currency, traditional banks and fiat onramps.

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1. Introduction

The global financial market houses myriad assets that people can choose as a transactional medium, store-of-value, or an investment. Given the potential of the Bitcoin blockchain, it is opined to be a perfect solution to transact, store, and account for these assets. The world wealth accounts for 360 trillion dollars, most of which is held by the banks and financial institutions. Bringing these assets onto a global digital platform is certain to forge the path for significant opportunity. One such platform is the Bitcoin network that has gained worldwide acceptance.

Bitcoin was created to fuel electronic peer to peer payments pivoting around cryptographic proof rather than trust, thus enabling direct transactions between two parties while making third party functions redundant. The Bitcoin blockchain led to the creation of a new category of digital currency, referred to as cryptocurrency or decentralized digital currency.

Cryptocurrencies have surged in popularity due to their benefits, such as instant transactions at low costs, trustless ownership and exchange, pseudo-anonymity, international borderless transferability and convertibility, transparency, and elimination of conventional banking system problems. Despite huge popularity, cryptocurrencies have limited adoption. The reasons impeding their use as a unit of exchange and unit of account include price volatility, inadequate understanding of the technology, and complexity for non-technical users. The volatility of cryptocurrencies also hinders them from serving as a standard of deferred payment.

One proposed solution is to create a stablecoin, whereby an issuer provides cryptographic tokens to investors in exchange for a specific fiat currency, commodity or cryptocurrency. These tokens are pegged by other stable assets like USD or precious metals and hold their value fixed at a 1:1 ratio, thereby overcoming crypto volatility.

2. Opportunities for stablecoins

The launch of a fully-functional cryptocurrency is akin to the launch of smartphones for the first time. No one would have anticipated the revolution that smartphones brought – be it in terms of browsing, making payments, accessing bank accounts, and more. Smart phones have empowered people to carry their banks with them. Today, almost any service is available at the tap of a button. Airbnb was not what someone thought of when anyone said “app” in 2008. Similarly, cryptocurrency offers diverse applications – while some are existent, many others will form and take the world by storm over time. Money is a fundamental of commerce and cryptocurrency is the least regulated most practical form of money invented to date.

2.1 Growing the cryptoasset ecosystem

Asset-backed stablecoins have acquired huge adoption as a means of exchange in the crypto trading ecosystem. A reliable stablecoin has the potential to serve as a store of value and medium of exchange. Furthermore, a stablecoin is essential for the development of any distributed app economy. Holding a different volatile token for every dApp may spark investors' interest but it is inefficient for normal users. Low transaction throughput is a serious impediment to a flourishing dApp. The attainment of high throughput would pave the way for the development of dApps that are currently infeasible. However, before distributed app technology gains considerable adoption, the cryptoasset industry will be an early adopter of its financial technology. A cryptocurrency with a stable market value has the potential to achieve more usage in cryptoasset trading, crowdfunding, payment in dApps, commerce within the industry, and as a treasury currency for industrial projects.

2.2 Strengthening evolving markets

The fiat currencies of many emerging markets are losing their value. While many individuals are safe from its consequences, many others are affected by it. Imagine a scenario where you are forced to hold a currency that depreciates by 50% every year and you have no other alternative.

The citizens of countries affected by inflation can hold foreign currency rather than their inflationary currency, but the governments would not permit their residents to do so. As more people sell the local currency, its value diminishes in the global market. Governments and central banks can conserve the value of their local currency as they have the power to mint this currency. Misusing this power is the primary cause of inflation.

Stablecoins are poised to revolutionize the monetary game. They can be a viable solution to countries facing such a crisis by enabling their citizens to quickly exchange their failing local state issued currency holdings into a universal, digital stablecoin, thereby hedging against any further losses in value or wealth.

2.3 Globalizing transactions

Legacy technology and the over-reaching involvement of various third parties have always made cross-border payments slow and expensive. It takes three to five days to clear a transaction, and the transaction and the currency exchange fees average 4% to 4.5% of volume. Additionally, Payment Service Providers (PSPs) struggle to interoperate because of the lack of standardization of messaging formats. Although some initiatives, like the development of ISO 20022, have been taken to overcome this challenge, it is hard to reap their full benefits if they are perceived and implemented differently across jurisdictions.

Just like PSPs might struggle to interoperate due to lack of standardization, back-end service providers may struggle to transmit and reconcile transactions because of the same reason. Thus, cross-border payments have to address more challenges if the information originated by the payer's Payment Service Provider does not match in format or content with the information required by the payee's Payment Service Provider. The additional complexities have to be managed, which can increase the cost and transaction processing time.

A stablecoin with wide acceptance will eliminate these barriers and enable round-the-clock, accelerated global transactions. Usable as a means of payment and store of value, stablecoins can potentially foster the development of a global payments system that is faster, cheaper and more inclusive compared to the existing system. It would also enable businesses to scale internationally while eliminating the need for the development of a new infrastructure to connect and interact with local banking institutions in every region.

2.4 Eliminating problems with capitalism

Money is vulnerable to manipulation and many methods of becoming wealthy do not involve providing much value. An example of this gaming is manipulative gambling places like casinos or the stock market that flourish on less informed participants.

Certainly, cryptocurrencies are not a solution to these problems with capitalism. In fact, cryptocurrencies have exacerbated the problem as these assets have been used for gambling and stealing money from others through volatile markets. However, a stable currency coupled with technological advancements can provide better solutions. It can provide new solutions to govern and automatically regulate capital markets' behavior.

2.5 Fiat and value onramps

The cryptocurrency markets greatest impediment to growth has been access. The legacy banking system is the primary competitor to the entire crypto space and unfortunately has authority over the global economies wealth. Naturally the banking system has stifled growth by refusing to conduct business with crypto centric companies, turning off the value tap, restricting the flow of valuable funds into the ecosystem. This friction reduces investor confidence and deters large amounts of capital from being injected. Institutions cannot safely enter or exit this emerging investment market and therefore many stay sidelined. A bank independent value onramp entering the crypto space could be the most important catalyst for the entire industry.

3. Proposed solution

GUS is a fiat-pegged stable currency that will be issued on the Bitcoin blockchain via the Omni Layer protocol. Each GUS stablecoin that will be issued into circulation is pegged in a one-to-one ratio by the US dollar (i.e. one GUS is = in value to one US dollar only). GUS will be redeemable for gold held in the company's main vault using the Proof of Asset (PoA) protocol. Once a GUS has been issued, it can be stored, transferred, and spent like bitcoin or any other cryptocurrency.

GUS will serve as an ideal solution for the institutions that seek trust and liquidity during entry and exit into the investment vehicles. GUS will offer distributed, global access to the tokens with liquidity-rich commodity, enabling accredited investors to seamlessly move large amounts of funds in and out of the crypto space.

3.1 Benefits of GUS implementation

Bitcoin blockchain: GUS stablecoin is created and circulated on top of layer 2 of the Bitcoin blockchain instead of a less developed and tested altcoin blockchain.

Usability: GUS can be used like bitcoins in a P2P, cryptographically secure environment.

Seamless integration: GUS can be integrated with any exchange and wallet that support Bitcoin.

Properties: GUS derives its properties from the Omni Layer protocol which is the layer built above the Bitcoin network underpinned by features like transparency, security, accountability, and reporting functions.

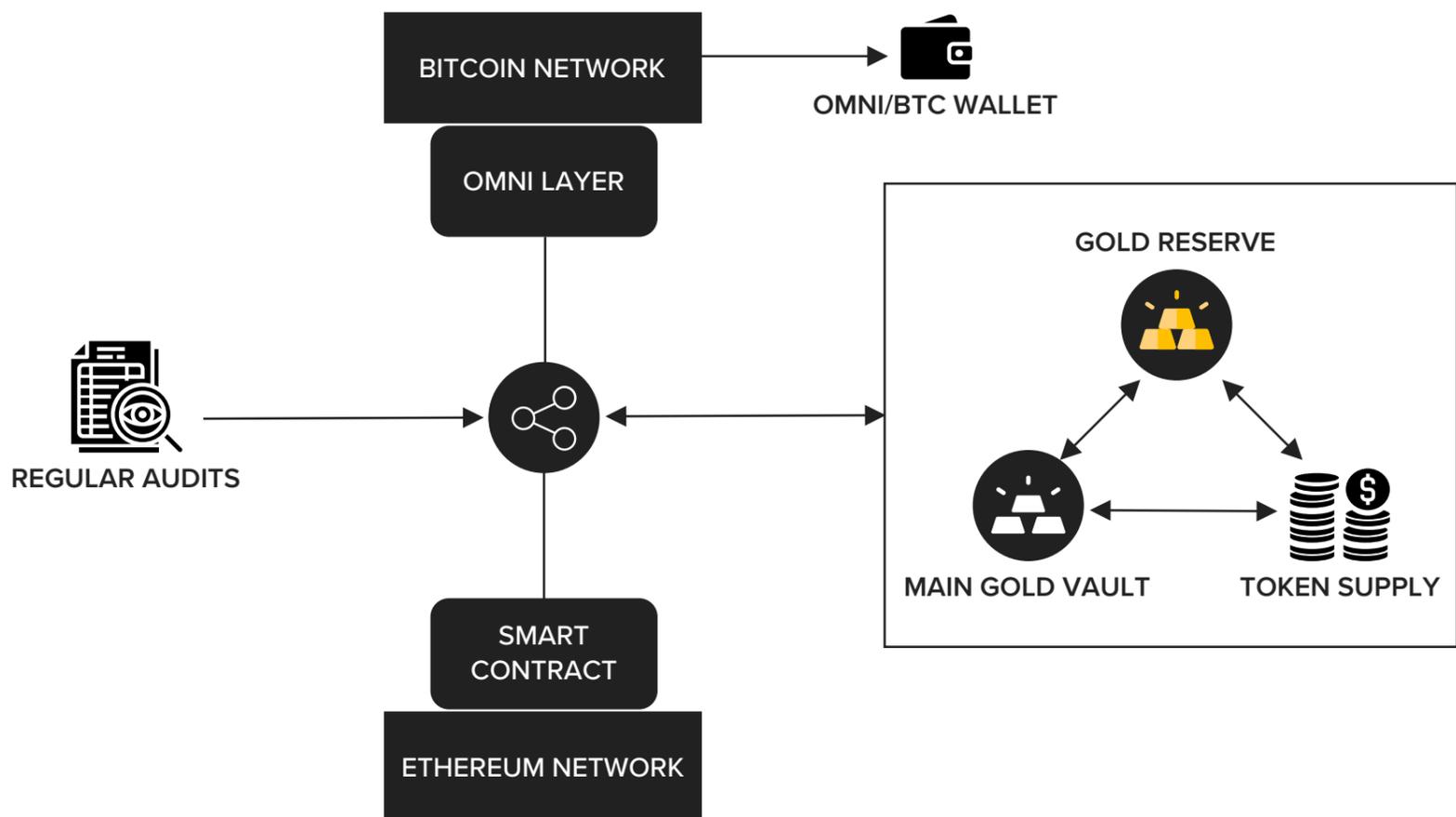
Secure approach: GUS leverages a simple yet effective approach to maintain the reserves, which mitigates counterparty risks.

No liquidity constraints: The process of issuance or redemption of GUS stablecoins will be immune to pricing or liquidity constraints. Users can buy or sell their desired GUS stablecoins quickly and easily.

Invulnerable to market risks: GUS stablecoins will not be affected by any market risks like liquidity crunches, black swan events, and more since the reserves are maintained in a one-to-one ratio instead of market forces.

3.2 GUS technology stack

Each GUS issued into circulation will be pegged in a one-to-one ratio to an equivalent amount of USD and can be used to buy or sell a predefined amount of gold held in the main vault of the company.



Technology Overview

The technology stack of GUS comprises the following:

3.2.1 Bitcoin blockchain

One of the never-ending arguments for bitcoin is that unlike stocks and bonds whose prices are highly sensitive to the decisions of central banks and governments, the cryptocurrency is independent of sovereign authorities. Instead, it is governed by fixed policies that are hard-coded into the underlying network, and therefore difficult to change.

Under those rules, the supply of bitcoin is capped at 21 million, making it invulnerable to inflation like developed market currencies such as the U.S. dollar, Euro and Yen might be if their respective central banks resorted to more money-printing as a way of stimulating their economies.

In the proposed solution, our stablecoin is embedded with the Bitcoin transaction ledger as meta-data via the consensus mechanism, referred to as Omni Layer.

3.2.2 Omni layer protocol

The existing Bitcoin network is good for transferring value but can also be used as a protocol layer to build new currency layers with new rules on top of it, without changing the foundation. This protocol will:

Overcome the two biggest barriers to widespread Bitcoin adoption – which are instability and insecurity.

Financially benefit the Bitcoin community, including those who do not use the new protocol layers.

Provide sufficient initial funds to hire developers to build software which implements the new protocol layers in addition to ongoing funds to pay for the maintenance of the software.

Reward early adopters of the new protocol based on the success of the project.

Moreover, Omni Layer is a dedicated BTC wallet (which is why the FIAT rate is the same as BTC for all times). However, one can send and receive BTC transactions using the Omni wallet but it is highly recommended to do it with the default "Bitcoin" wallet. The use of the "Omni Layer" wallet should be made exclusively for transacting the tokens that are created on the Omni Layer. Although it is a layered protocol for the Bitcoin system, all Omni tokens can be technically termed as tokens on the Bitcoin blockchain, with additional exchange and a wallet that support BTC.

It serves as the foundational technology responsible for:

Creating and burning GUS tokens

Tracking and reporting the circulation of GUS tokens using a smart contract

3.2.3 Smart contract

Smart contracts are using the blockchain technology to facilitate the exchange of money, property, information or anything that people deem appropriate to initiate a smart contract.

The decentralized nature of blockchain-based peer-to-peer transactions means that smart contracts eliminate the middlemen. Traditionally, individuals or institutions such as banks and solicitors were required to facilitate legally binding contracts. Smart contracts allow individuals to bypass these costly and often slow middlemen and agree on a contract directly.

In our implementation, we have used smart contract for exchanging authentic information about GUS stablecoin, such as real-time gold reserve, total token supply and the current gold price. Acknowledging this, there will be a transparent logic for computing new supply and adjusting gold reserves to keep the token value pegged to 1 USD.

In regular time intervals, this contract will be triggered to maintain the gold price, reserve value with respect to the token supply using a reserve pool of gold in vaults which act as working capital to maintain the main vault reserve stable to gold price and token supply in order to achieve token stability. As the smart contract is triggered, the computations are performed and the output of these computations updates the main vault reserves and total token supply in the Omni network.

3.3 Methodology

GUS's honoring principle is simple and effective as it simplifies the process of proving that the total number of tokens in circulation (liabilities) is always fully backed by an equal amount of gold reserve with each token equal to 1 USD held in the main vault. In our configuration, each token in the circulation represents 1 US dollar with equal grams of gold held in our reserves for 1 USD per token (i.e. a one-to-one ratio) which means the system is fully reserved when the sum of all tokens in existence (at any point in time) is exactly equal to the value of gold held in our reserve. Since GUS is issued on the Bitcoin blockchain using the Omni Layer protocol, the probability and accounting of these tokens at any given point in time is trivial. Supporting this, the corresponding total amount of gold held in our reserves is proved by publishing the vault balance and undergoing periodic audits by gold specialists. The GUS token is issued via the Omni Layer protocol. Omni operates on top of the Bitcoin blockchain and therefore all issued, redeemed, and existing tokens, including transactional history, are publicly auditable via the tools provided at Omnichest.info.

The Omnichest.info asset ID for GUS is #x.

Here is a link: <http://omnichest.info/lookupsp.aspx?sp=x>

- Let the total number of GUSs issued under this asset ID be denoted as GUSissue
- Let the total number of GUSs redeemed under this asset ID be denoted as GUSredeem
- Let the total number of GUSs in circulation at any time be denoted as GUS

$$\text{GUS} = \text{GUSissue} - \text{GUSredeem}$$

GUS = “Total Property Tokens” @ <http://omnichest.info/lookupsp.aspx?sp=x>

We have a vault account which will receive and send gold to the users who deposit/redeem gold/GUSs directly with us

- Let the total amount deposited into this account be denoted as Golddepo
- Let the total amount withdrawn from this account be denoted as GUSwithd
- Let the gold balance of this bank account be denoted as DGold

$$\text{DGold} = \text{Golddepo} - \text{GUSDwithd}$$

Each token issued will be backed by an equivalent amount of currency unit (one GUS equals one dollar). By combining the above crypto and gold accounting processes, we conclude:

“Solvency Equation” for the System.

1. The Solvency Equation is simply $\text{GUS} = \text{DGold} / \text{GoldPerDollar(grams)}$. Every token issued or redeemed, as publicly recorded by the Bitcoin blockchain will correspond to a deposit or withdrawal of funds from the bank account.
2. The probability of GUS relies on the Bitcoin blockchain as discussed previously.
3. The probability of DGold will rely on several processes
We will publish the bank account balance on our website’s Transparency page.
4. Professional auditors will regularly verify, sign, and publish our underlying bank balance and financial transfer statement.

3.3.1 Divisibility of tokens

GUS tokens will be divisible up to 8 decimal places, to accomplish:

Righteousness

Every time a user deposits or withdraws gold, the divisibility of tokens will ensure that the equivalent amount of tokens are credited to or debited from the user's account. This will further help maintain stability.

Stability

In the event of fluctuations in the gold price, a specific amount of gold needs to be moved to and from the main vault to keep the price of each GUS token stable to 1 USD. The accuracy required to honor this is achieved by the divisibility of token up to 8 decimals.

Precise fee calculations

The GUS platform will charge a low transaction fee, which will be a fraction of a transaction and of considerably small value. The divisibility of tokens will facilitate accurate small computations like these.

3.3.2 Fees

The GUS platform will charge a small fee in the following instances:

- The users transfer their GUS tokens to other users
- The users withdraw their GUS tokens from any exchange

The fee will be used to cover the following expenses:

- Maintaining the gold vault with security covered
- Insuring the gold and growing the GUS reserve
- The transaction fee for the transactions carried out on Bitcoin blockchain

3.4 Flow of tokens

As a user deposits gold to the GUS platform and the corresponding stablecoins are minted, the tokens can traverse the following journeys before they are burned.

3.4.1 Exchange between different users

Once the tokens enter the circulation, they can be transferred between different users with ease. For example, User 1 can transfer all or some of his tokens to User 2, who can further transfer some or all of his tokens to User 3, and so on.

3.4.2 Medium of exchange

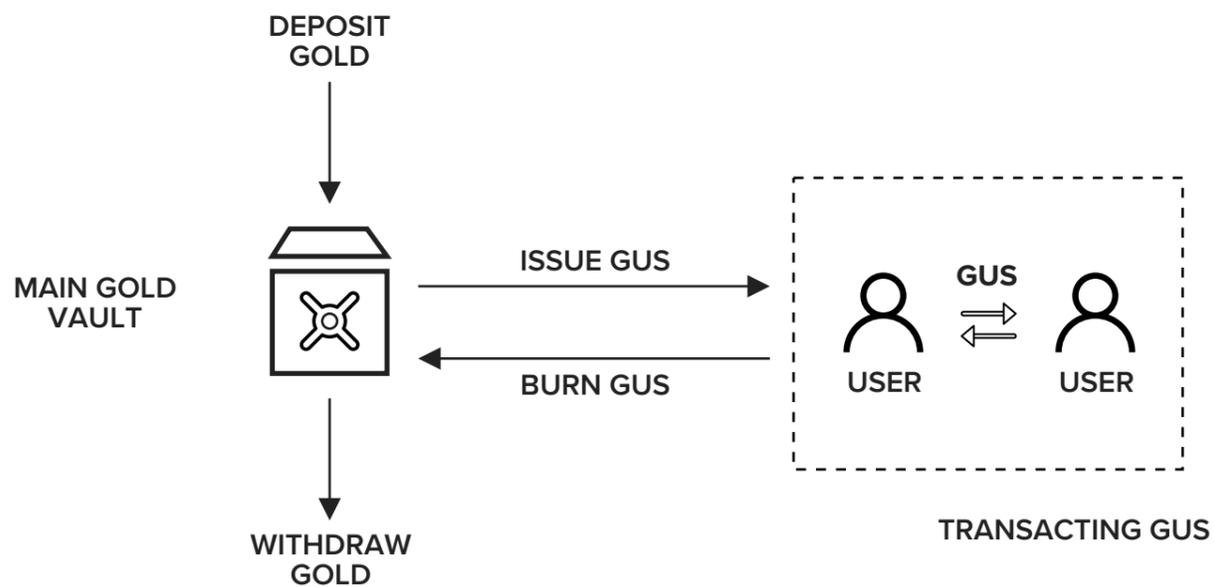
Once the tokens enter the circulation, they can be transferred between different users with ease. For example, User 1 can transfer all or some of his tokens to User 2, who can further transfer some or all of his tokens to User 3, and so on.

3.4.3 Trade

Trading stablecoins is one of the lowest risk ways to earn profits in cryptocurrency. Stablecoins have multi-billion market cap and billions of dollars of daily trading volume. The users can trade GUS tokens on any cryptocurrency exchange across the globe that lists these tokens. The trading pairs may vary with the exchange platforms.

3.4.4 Lend

The tokens can be leveraged by the users to borrow or lend on a cryptocurrency lending platform, based on the business model, thereby facilitating and accelerating peer-to-peer transactions.



4. Process flow

Step 1: The Admin will deposit certain value of gold in the company's Reserve Wallet and the same balance of gold will be reflected in the wallet.

Step 2: The initial deployment of the smart contract will take place wherein the calculations – such as adding gold, removing gold, adjusting GUS token supply and gold as per the varying gold price – will be performed by the smart contract based on the input value.

Step 3: Based on the value initiated by the Admin, the main vault and wallet will reflect real-time values.

Step 4: The initiated value in the Main Wallet will be sent to the Omni Wallet via RPC (Remote Procedure Call) and the request for coin minting will be initiated which will be added to the wallet of the user triggering the process.

Step 5: The Admin will update the price of gold on a regular basis in an automated manner.

Step 6: Based on the price updated by the Admin, the Main Wallet's balance will be matched against the total number of coins in circulation. Any difference in valuation will be balanced by transferring gold between the Main Wallet and the Reserve Wallet to maintain token's stability.

Step 7: Each request for gold withdrawal will update Omni Wallet's balance.

Step 8: Each time the gold is withdrawn, the equivalent amount of GUS stablecoins will be burned.

Step 9: Assets in the Main Wallet will also be burned to maintain equilibrium. Users can purchase GUS stablecoins from our buy/sell platform and store them in the wallet integrated into the platform and fortified with multi-layer security.

5. Maintaining reserves

The main vault holds the gold that can be bought or sold in exchange for GUS stablecoins. Ownership of each GUS stablecoin allows a user to have access to one USD worth of gold stored in the main vault as per the current market price of gold. The total supply of tokens and the balance in the main vault are calculated, reflected and updated using a smart contract that can be accessed by anyone to verify the details.

5.1 What happens when the price of gold changes?

At any given point, gold reserve will be utilized to stabilize the price of 1 GUS token to 1 USD to make it immune to gold price volatility. In a scenario when the price of gold increases, calculated amount of gold will be transferred from the main vault to the reserve vault. Similarly, a decrease in gold's price will lead to the transfer of a calculated amount of gold from the reserve vault to the main vault.

The calculations done for transferring gold between main vault and reserve vault will be done using the smart contract which considers total token supply, value of gold held in main vault and the buying capacity of gold per USD with respect to the current price of gold in the market.

Following this process will always ensure the value of each token circulated to be equal to USD which will be audited and maintained regularly by the gold specialists.

6. Importance of Stablecoins

Cryptocurrencies lack both short-term and long-term stability, making them a risky alternative to fiat or conventional assets. The volatile nature of cryptocurrencies impedes their adoption for daily use as it adversely affects users' purchasing power (referred to as the financial ability to purchase goods and services). To steer mainstream adoption, some sort of stability is required. This is where stablecoins fill the bill. Stablecoins are the only type of cryptocurrencies that are not subject to price volatility like other crypto assets. They play an important role due to the following reasons:

6.1 Safeguard against local currency crash

Stablecoins have the potential to benefit the residents of hyperinflation-affected countries. Hyperinflation occurs when the price of goods and services soars by over 50 percent a month. According to a report by Ernst & Young, the six hyperinflation economies include Angola, Argentina, Sudan, South Sudan, Syria, and Venezuela. The most distressing example of this is Venezuela, which registered approximately 54,000,000 percent overall inflation rate since the year 2016. The country's native currency has devalued by over 95 percent, resulting in its residents suffer extreme poverty and lack access to the basic human necessities. It is extremely hard for such countries to move their capital outside of the country due to the capital control laws enforced by the government to prevent money from leaving the country. Converting the money in stablecoins will ensure that the value of money is preserved, rather than holding the national fiat currency which might further devalue and reduce people's purchasing power. Stablecoins can globally safeguard people against economic and political uncertainty.

6.2 Hedging mechanism for traders

Hedging refers to alleviating the risk of unfavorable price movements in an investment or asset. This strategy is often exploited in the investment world to protect traders' positions by reducing the risks. Stablecoins are leveraged in the crypto market as a hedge against Bitcoin and other altcoins. A large number of cryptocurrency traders, mostly short-term traders, sell their crypto assets for stablecoins when the price of cryptocurrencies is anticipated to decrease. Converting cryptocurrencies to stablecoins protects their value. The monthly volume rankings of cryptocurrencies exhibit that Tether (USDT) holds the second-highest trading volume after Bitcoin. Tether is the most popular stablecoin on the market harnessed by traders to hedge their positions.

6.3 Enabling merchant payments

The value of Bitcoins held by payment processors nosedived by nearly 50 percent from June through November this year. With huge price movements that can lead to Bitcoin's value fluctuating by a considerable value in a short time, even this cryptocurrency remains a speculative medium of exchange for merchants and everyday users. Stablecoins have the potential to foster confidence, security, and transferability across the payments ecosystem.

7. Unique feature of GUS

Gold has a global endowment of around \$8 Trillion and consists of a savvy, worldwide, active investor demographic with a daily trading volume greater than most major financial assets. Gus not only provides a new pipeline connecting this market to the cryptocurrency markets but it does so completely independent of the legacy banking system. This unique network setup could facilitate the largest fiat and value onramp the cryptocurrency market has ever seen and could serve as one of the most significant catalysts to boost the entire market and move it into the mainstream spotlight.

8. Conclusion

GUS is a world's first bank independent capital pipeline enabling the free flow of capital around the world, independent of the banking system.

Our USD-pegged stablecoin is built on the Bitcoin blockchain – the most secure and well-tested blockchain. GUS stablecoin is pegged in a one-to-one ratio and is immune to any market forces, pricing or liquidity constraints. Our compliance and legal structure lay a secure foundation for us to serve as gold custodian and issue GUS stablecoins.

We are backed with a team of seasoned and respected gold experts, fintech developers, Geopolitical and macro-economic professionals and investors who have harnessed their deep domain knowledge and expertise to bring forth a Bitcoin-based USD-pegged free market stable currency.

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