

[Exploratory Study on Stablecoins and Asset Pool Reserve Alternatives]

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Abstract. The future of stablecoin marketplace is uncertain and in constant flux. The emerging dominance of this unprecedented technology demands attention from every country in the world to regulate and extract value from this new digital monetary system. The stablecoin protocols that will survive are the ones that will survive the market cycles and future economic crises', and maintain the desired peg continuously. Many reserve-based stablecoin protocols are seeing that success and will continue too. New equity pools will continue sprouting up that have diverse asset pools not yet explored in the defi industry.

Introduction

Reserve backed stablecoins are the most reliable and transparent way for investors to exit into safe assets during volatile market cycles. Transparent in the sense you can see the pool's collateralization ratio and be certain the deposit of your currency of choice is safe, even in times of volatility. Reliability is guaranteed due to smart contract-based liquidations automatically de-leveraging the asset pool to maintain the peg within a standard deviation and save the senior tranche of funds. This ideal reserve-backed stablecoin would have exogenous asset backing with pools of safe, constantly appreciating investment vehicles.

Exploring Alternative Reserve Pools

Alternative asset pools for stablecoins are an important topic to explore. There have been many stablecoins that have failed to maintain their established peg due to reliance on endogenous or hybrid asset backing. 100% of stablecoins where there was no asset backing collateralized to maintain the stable peg, have indeed crashed spectacularly, costing investors and users millions of dollars.

Real estate could be explored as being a safe asset pool to invest in to keep a peg. There are certain protocols in development⁽⁶⁾ and in design stages today that have put fractionalized ownership of real estate onto blockchain technology. This allows direct peer to peer trade and allows greater accessibility to investment opportunities to people all over the world. In some cases this ownership could be from international investors in which case could cause risk from foreign investors scooping up cheap real estate property aboard. In any case the percentage of proof of ownership of physical real estate, (and virtual), on the blockchain will go absolutely parabolic. This will lead to a continuously appreciating asset pool, protecting the desired peg of the protocol. The real estate market always has recovered after times of market volatility and decline. The real estate has sector has been so hot in the past decade that stories have been popping up of big institutional investors investing in localized real estate and skyrocketing the prices or holding the property indefinitely.

A reserve asset-backed pool with investment vehicles in the power market is an exciting proposition. That's marketable, electricity power. The power grid is a relatively new marketable commodity that can be priced by per kilowatt hour(kWh) for retail use. An interesting trait of this new tradable commodity is that it is both produced and consumed simultaneously. It is expensive to store electricity so the supply and demand must be in balance to provide utility. Blockchain protocols such as Powerledger have been working on building a

energy market for this commodity since 2017. Creating an energy marketplace and being a market maker for one of the most-used and constantly growing commodity in the world. xGrid, a Power Ledger product⁽⁵⁾, allows retail users to trade electricity across the xGrid with real-time pricing. This is an incredible breakthrough that allows peer to peer trading of electricity. Electricity is expensive to store in the real world, but is it expensive to store in the digital ledger? Putting some of that electricity that is generated but not used can be put in a pool that could be put to various uses. The tokenized electricity could be pooled to solve complex algorithms, provide resources for cloud computing efforts, provide liquidity for equity pools, and other novel uses. Research on ways to tokenize this electricity has been vastly accelerated by blockchain protocols such as Powerledger. There is a great opportunity for more research into this.

Regulatory Integration

Many blockchain protocols sacrifice decentralization for speed and give into regulatory pressure when demanded. There will be widespread crypto legal framework established in the coming decades. It is imperative to study and document the impacts to the true decentralization efforts that were originally established with protocols such as Bitcoin. Can stablecoin protocols feel the pressure of the regulators and avoid know-your-customer(KYC) and anti-money-laundering(AML) laws? Only organizations such as DAO's may be able to resist.

Some protocols have set themselves up to be regulation-friendly. They have a constant redemption rate of \$1 but users of that protocol must trust the issuer is solvent and will maintain the peg honestly. Companies like Tether that issue the stablecoin (UDST) have already faced indictment from New York and scrutiny from other parties on their fractional reserve backed system. The tether protocol and its parent company seems to act as a commercial bank would in the legacy financial system. Tether's strategy could be to mint USDT to purchase bitcoin to get returns on their loaned out UDST in their fractional reserve system. Of course

there has to be demand for the USDT in the first place, so Tether as a company is most likely as solvent as any other fiat commercial bank using a fractional reserve system. USDC is another institutionalized stablecoin protocol that is integrated with a company called Circle. Circle USDC acts more like a money market firm, offering centralized services for crypto fiat on ramping and low interest-bearing services such as annuity and bond type vehicles. These protocols will be the safest from regulators because of the continual dependence on the U.S. dollar as the reserve or backing currency. These centralized stablecoins stand a chance of co-existing with a central backed digital currency(CBDC). Other stablecoin protocols such as MakerDAO may as also be safe as long as DAO's status remains legal or in the grey area. So far only a handful states have allowed DAO's legally incorporate, and national regulations could take a number of years as congress and the committees research proper frameworks for integration.

Stablecoin Tokenomics

Stablecoins do not have to be stable. The Euro and British Pound have a standard deviation of anywhere from 6%-12% in any given year⁽⁴⁾. The stablecoin protocol should be designed with volatility and potential future economic crises in mind. A standard deviation from the peg that is allowable within a certain standard deviation(say of 3%) and circuit breakers set if that peg breaks. For example, if the reserve ratio is equal to 80%, the peg could slowly slope down to \$.80(assuming \$1 peg) and have a circuit breaker at that level. This will not allow the reserve assets to be depleted because of arbitrage opportunities. This slight slope of the redemption curve after a certain percentage can also deter speculative attacks on the network by lowering profitability as they spam the network. The reserve asset pool must be impenetrable, protected from exogenous manipulation. The equity pools must be built on assets that are nearly risk-free and do not cause unintended loss such as impertinent loss; having to spilt one or more volatile assets into a liquidity pool. The two sources of value that back a currency are the asset or pool of assets backing the currency and the economic

usage of that currency. Certain hybrid models have been successful with implementation of the asset backed pools but fail when trying to reward holders of the endogenous coupon with rewards from fees, etc. These types of direct coupon rewards for the endogenous token can cause deleveraging spirals⁽⁴⁾ and cause the redemption curve of the linked stablecoin to decline sharply towards \$0. Another type of stablecoin that has not shown great success in maintaining its utility is basis type of stablecoins. Where the stablecoin has no backing at all, and speculators maintain the peg by betting on future supply expansion. The speculators are also betting that the supply continually expands even beyond pre crisis levels while leveraging their implicit collateral during the crisis. These basis stablecoins can be redeemed for exogenous tokens and the redemption curve typically crashes to zero when demand dries up.

Algorithmic stablecoins are based on a different set of parameters to keep its peg. An really interesting idea that a famous Nobel prize winner from the 70s, Milton Friedman, made popular.⁽³⁾ The supply of the protocols tokens fluctuate instead of the protocol's price. The Ampleforth protocol has put an elastic supply system in place to keep the peg of their AMPL token price near or at one 2019 U.S. dollar. When demand is in effect the price will rise above \$1 dollar from demand for a pegged asset, away from volatility. Everyday at certain timestamp the supply is expanded or contracted to absorb that volatility and the AMPL supply is distributed or burned directly from the AMPL holder's wallets! This peg has remained a really interesting experiment but has not achieved the exact goal of having reduced volatility of a stablecoin. This is true especially when the market goes south, AMPL goes with it below the peg. But, as the market cap of the Ampleforth network grows, the goal is for the volatility to decline and possibly the peg can be maintained. The AMPL token is pegged to the 2019 U.S. dollar, so inflation has been accounted for in the tokenomics. One would assume the overall average price of AMPL to be slowly rising over \$1 as the years go on due to the inflation from that 2019 U.S. dollar.

Cross-chain protocols are going to be the main driver of blockchain adoption in the future. The ability to select and diversify assets or tokens over multiple protocols, choosing the best features from each will open the door for novel, very profitable products across almost every industry. Investment vehicles, tokens, or protocols that are stable and have high transactions per second(TPS) to travel through the cross chain bridge, or possibly act as an intermediary in the cross chain smart contract. These cross-chain stablecoin tokens could possibly be designed as “quantum” tokens, with one asset earning interest on one chain and a derivative of that staked asset, mirrored on another chain earning interest. This type of leverage may be possible today but will become more accessible and with higher yields in the future.

Climbing out of the rabbit hole and back to reality, simple tokenomics can also be just as profitable for long term investment growth. Appreciation of the stablecoin value in relation to inflation for the holder must be considered when building the tokenomics of the stablecoin protocol. People around the United States are experiencing unofficial double-digit inflation in the U.S. dollar currency. Commodity prices around the U.S. have doubled or tripled since the covid pandemic in March 2020. This means that other countries around the world have or will feel the effects of this inflation, supply-chain issues, lockdowns, etc. As demand increases and supply decreases, commodities will get more expensive and continue inflating. All this background concludes that stablecoins need to appreciate at a constant rate to keep up with inflation. In the beginning of Q1 of 2022 the U.S. inflation rate was almost 7%. Is the average American holding U.S. dollars feel good about losing seven percent purchasing power a year? Why not have a stable coin the appreciates at the rate of inflation or greater to offset Keynesian American monetary policy of quantitative easing. A new reserve currency basket of utilities that all global commerce relies on to appreciate and grow constantly. The burgeoning energy market and/or the resilient real estate market should be explored as a solution.

Conclusion

Reserve-based stablecoins are the safest design for the blockchain space in 2022. As price oracles increase in performance and broaden their scope of data feeds, multiple different asset reserve pools will open up to efficiently collateralize debt and asset pools across countless markets and industries. An expansion of the stablecoin space could explode again when cross-chain smart contracts are enabled and new, highly profitable yield strategies emerge. Smart contracts and digital ledger technology will, in the future, make our lives easier and allow greater accessibility to monetizing goods and services not possible before.

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