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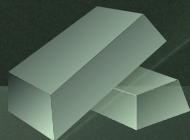
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It all comes down to liquidity — Liquidity Risk in Digital Asset Markets



Healthy levels of liquidity play a critical role in maintaining healthy market conditions — nowhere is this truer than in DeFi markets. In traditional financial markets, liquidity is typically provided by institutional investors, such as banks and hedge funds. However, for DeFi the responsibility falls on a diverse set of market participants, ranging from retail investors, institutional allocators, and specialised liquidity providers. Unlike traditional markets, there is no centralised authority to regulate trading hours or halt trading in the case of a crisis. This poses a significant challenge to market participants who need to manage liquidity risks 24/7.

Following a series of market events, such as USDC depegging from its 1:1 USD value ratio and the FTX bankruptcy last year, the DeFi market has stabilised at a Total Value Locked (TVL) of approximately \$52.8 billion, falling from its peak of \$212 billion at the end of 2021. This has put the significance of liquidity risks in the digital asset market into sharp focus. While liquidity is essential for the proper functioning of DeFi protocols, it can also be a source of risk if not managed carefully.

In simple terms, liquidity risk refers to the possibility of not being able to quickly buy or sell an asset without significantly impacting its price. This risk arises when there is a scarcity of willing buyers or sellers in the market, making it

challenging to convert assets into cash or acquire desired assets when needed. However, when we consider digital assets, they introduce unique properties that add complexity and a different dimension to our understanding of liquidity.

While seeking safety and stable assets is important, it is crucial to consider the underlying assets within a risk model to truly determine if they are a safe haven. In the realm of digital assets, there is often a flight to stable value by converting speculative assets into stablecoins. However, liquidity risk exists not only across different assets, but also across networks. The treatment of stablecoins on one blockchain compared to another must be carefully evaluated.

For instance, USDC and USDT on the Ethereum blockchain are widely supported tokens with pairs available on both centralised and decentralised platforms. However, when deploying funds in this space, allocators must consider factors such as fees, the time required to transfer an asset to an exchange for selling, and the potential slippage incurred when trading fewer liquid pairs on decentralised exchanges (DEXs). These considerations all fall within the risk assumptions that allocators must make in this market.

There are various traits of asset liquidity, and one aspect to consider is the transferability trait of an asset. Over the past eight months, as different market participants have faced challenges, centralised trading venues have taken the drastic action to disable user withdrawals. We refer to this type of liquidity risk as "Trapped Liquidity." Unfortunately, if you have allocated funds to these exchange



accounts, the risk of trapped liquidity is unavoidable; since the exchange holds the private keys, initiating a withdrawal becomes impossible without the exchange's cooperation.

As a result, market infrastructure plays a crucial role in determining fundraising potential, while also placing the burden on funds to develop countermeasures and contingency plans to address the unavoidable counterparty risk associated with freeloading* exchange accounts.

In response to this reality, market participants employ various approaches to mitigate the potential negative impact of trapped liquidity. Strategies include using multiple venues, holding idle capital in stablecoins for easier movement, and safeguarding funds through custodial solutions or cash-type accounts, such as a USDC account at Circle. These measures aim to reduce the risks associated with trapped liquidity.

While we won't delve into the potential regulatory impact on exchanges and their asset holdings here, it is worth mentioning that in traditional markets, a segregation of duties has always existed. Similarly, we may see the development of a similar framework in the digital asset market as regulators acquire a deeper understanding of the space over time.

Liquidity risk is a critical factor in both traditional and digital asset markets. Managing liquidity risk becomes even more crucial in the digital asset market due to its decentralised nature and absence of centralised regulation. The stability and efficient functioning of DeFi protocols rely on adequate liquidity, but it can also present risks if not carefully managed. The introduction

of venues that combine custodial and exchange functions adds a unique complexity to the digital asset market, where the transferability of assets and their treatment across multiple networks, such as stablecoins, must be assessed and understood by capital allocators.

As we anticipate the emergence of regulatory frameworks that mirror those in traditional markets with oversight mechanisms, it becomes the responsibility of capital allocators to comprehend liquidity risk and implement suitable risk management strategies. By diligently considering the complexities of liquidity and proactively addressing potential risks, capital allocators can strengthen their market resilience and optimise their risk exposure.

*Free Loading: Pre-funding of an exchange accounts without a way of controlling underlying assets in a separate environment.

Multi-Stack Protocols are here!



During a bear market, protocols have choices to make. The smart move would be to vertically integrate other segments of the ecosystem into existing frameworks, thereby expanding market share and building an ecosystem grounded in the original protocol. We'll examine how different protocols are adopting this strategy, such as Curve introducing their crvUSD Stablecoin and MakerDAO launching the Spark Protocol to enhance the utility of its DAI stablecoin.



In May, MakerDAO, a longstanding protocol in the DeFi market, unveiled the Spark protocol. MakerDAO is a protocol designed to allow users to borrow against their Ether (ETH), and receive DAI, a collateral backed stablecoin, in return. Although the protocol has gone through many changes, DAI has remained its core value proposition and today is the 4th largest stablecoin on the digital asset market.

MakerDAO describes the Spark protocol as an Ethereum-based lending and borrowing platform, primarily centred around DAI, with initial launch having support for assets such as ETH, stETH (Lido Staked ETH), DAI, and sDAI (Stake DAI).

Spark bears some resemblance to another protocol, Aave, which enables on-chain lending and borrowing using a broad range of assets. From a technical perspective, Spark is quite intriguing as it incorporates established features, such as Maker's D3M (Direct Deposit DAI Module). This module maintains DAI liquidity within Spark and leverages a Peg Stability Module (PSM) to provide a seamless swapping experience between DAI and sDAI (Staked DAI) for USDC. There might be various reasons for launching Spark, but the primary objective seems to be the enhancement of DAI's liquidity and provision of more competitive rates to users, along with introducing a component that generates yield to the system.

So, let's jump to the Aave protocol and Curve who are also verticalising by entering the decentralised stablecoin race. Let's start with Aave's stablecoin called \$GHO (pronounced "Go"). GHO is a multi-collateral stablecoin native to Aave, which is one of the largest liquidity protocols in DeFi. The core aim is to offer stable value to the users of the Aave protocol, curtailing the need to rely on other stablecoins in the market.

GHO is backed by a 'pool' of other crypto assets, such as Ethereum (ETH). Currently in its testnet phase while being scrutinised by users and the development team, one interesting note is the mechanism for staking '\$AAVE Token'. The safety module for holders will play a critical part as a discounted rate is offered to participants staking to backstop the Aave protocol.

As Aave is currently in the experimental phase, Curve has taken the initiative and launched on the mainnet. Known globally as one of the top decentralised exchanges, Curve Finance, often referred to as Curve.fi, is a DeFi protocol that provides liquidity for executing stablecoin trades through multi-asset pools, offering the advantages of lower costs and minimal slippage risk. This raises the question: How does a DEX like Curve offer a stablecoin and how is it different to those offered by Aave and MakerDAO?

In its whitepaper, the key concept supporting \$crvUSD is the Lending-Liquidating AMM (Automated Market Maker) algorithm, or LLAMMA. This unique algorithm functions by toggling between a chosen collateral and the crvUSD stablecoin, based on which asset's value is higher or lower. So, when the price of the deposited collateral drops, the LLAMMA algorithm preserves the collateral value and minimises collateralisation risk by converting a part of it to the stablecoin. The fascinating aspect of this liquidation mechanism is its fully automatic operation, preventing users from risking total position liquidation as it takes place progressively.

As for maintaining stability, since the primary goal for any stablecoin is to keep a peg value (in this case, \$1 per crvUSD), an 'automated' smart contract called 'PegKeeper' has been implemented. It essentially manages the minting and burning process. When the price of crvUSD



exceeds \$1, the PegKeeper mints and deposits uncollateralised crvUSD to the stable pool. Conversely, if the crvUSD's price falls below \$1, it withdraws and burns some stablecoins in the pool.

Despite the ongoing bear market, it's inspiring to witness the continued innovation in this space. Even though some stablecoins experienced trouble in the market, the interest in them remains strong. Thus, GHO, crvUSD, and Spark protocol bring new promise to the stablecoin market, adding a new layer to the DeFi ecosystem. It will be on the market to keep observing how these decentralised stablecoins compete against each other, with the aim to unseat the centralised versions.

Sources

[Aave GHO Whitepaper →](#)

[Curve crUSD Whitepaper →](#)

[MakerDAO Whitepaper →](#)

Ledger Recovery — The key problem with private key management



Hardware wallet firm Ledger has received criticism over the last few weeks regarding its key recovery service, resulting in them delaying its launch. Called Ledger Recovery, the service allows users to create backups of their private keys to allow for recovery of their wallets if they lose their 24-word passphrase. This uses a form of MPC (multi party computation) to split the private key into three shards, which must then be brought together to access the wallet.

This marks an interesting shift in how self-custody arrangements could function for retail investors. One of the main barriers of entry into digital assets for retail is the perceived complexities of private key management and the immutability of blockchains. A recovery function for hardware wallets could help to reassure hesitant investors anxious of losing access to their wallets.

However, one of the key considerations when employing MPC wallet infrastructure is how and where shards are generated. If keys are created at the same time in the same place, this can lead to concerns surrounding the potential compromise of the shards. Ledger has said they will delay Recovery's launch until they can make the code open source — which they say will help to address concerns that the service cannot be audited to verify its safety.

For large funds and institutional investors, a self-custody arrangement of digital assets can be a thorny predicament. For example, there can be potential dangers to entrusting key management to individuals, as evidenced in the FTX debacle. For retail investors, MPC solutions could be a way to build stronger security and recovery methods, however MPC technology carries a heavy computational weight that makes it expensive to implement at scale effectively. Using cloud storage for shards can present additional vulnerabilities, while physical storage can produce a slow and cumbersome service.

Instead, specialised custodians catering to specific client types, such as institutional investors, tend to be the main users of MPC technology. Copper, for example, uses its award-winning MPC solution to back client assets in combination with our off-exchange settlement service, [ClearLoop](#).



What's more, a two of three signing quorum is required to verify transactions using shards to add additional safety, in addition to the shards being created and distributed in a decentralised manner to mitigate the risk of

While we will have to wait and see what shape Ledger Recovery takes once their code becomes open source. Although Ledger have received backlash for the proposed structure of Recovery, it will be interesting to see if the digital asset space is compelled to consider private key recovery services if regulators take this view as market infrastructure is continued to be built.

Sources

[Coindesk →](#)



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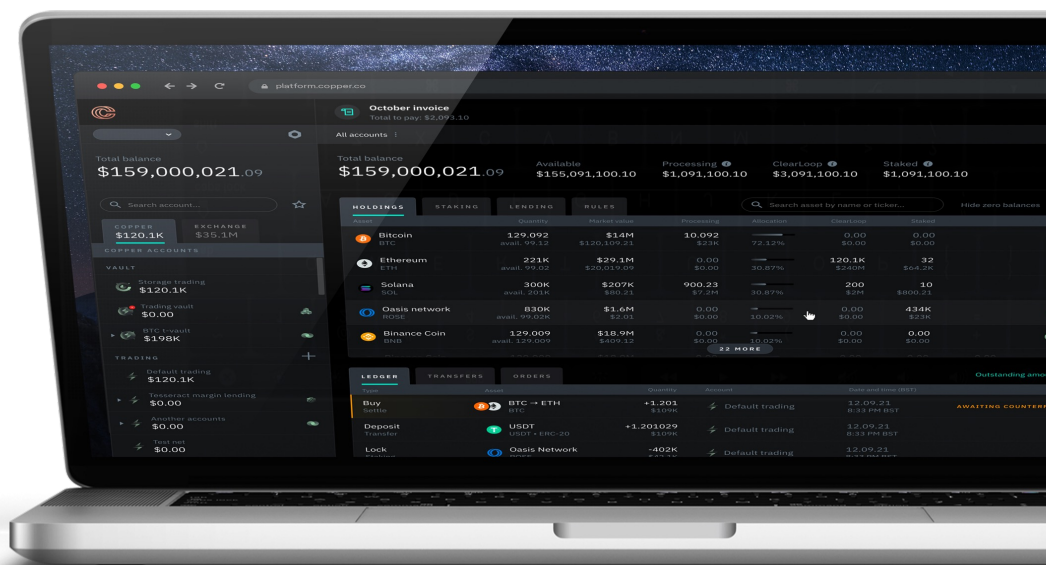
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