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There were few metrics for DeFi, so we created some.

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At the start of 2018 following Bitcoin's rise to global fame, the cryptocurrency market had over 1500 different tokens. Today, this number stands at just under 5000. All these different blockchains and protocols are attempting to differentiate themselves with some small technological adjustment from one coin to the next. For investors looking to build a portfolio, assessing which coin will flourish can be a daunting exercise.

What can be a useful consideration for investors are market narratives. While Bitcoin started with the vision of being used as a means for digital payments, it quickly moved into being touted as a Store-of-Value. Ethereum was slated to be the world largest smart-contract platform. To some degree, it's done just that. But it has veered clear into the realm of accommodating Decentralised Finance (DeFi). Developers have successfuly built out an ecosystem (DeFi) within an ecosystem (Ethereum).

The question then becomes, what are the narratives driving DeFi? And do investors have enough information to assess market valuations of DeFi platforms which have their own tokens or will they be dragged into a "Fear of Missing Out" hype that could eventually peter out?

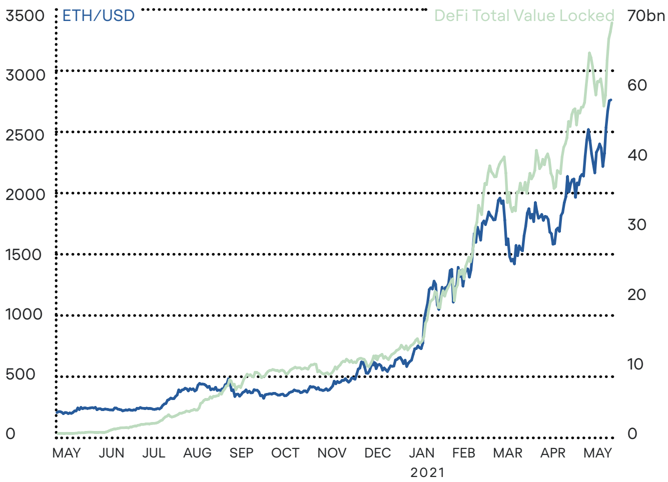
Traditional company valuation methods based on earnings and cashflows would be fairly useless in crypto as platforms have only really just started to gather pace. But that's not to say that current valuations of DeFi platforms are wrong. Finding absolute value in new technology is difficult. The interesting thing is that the public blockchain provides more transparecy than any publically traded company. It's just a matter of where to look and what to filter out.

Which is what Copper has done in this report.

The cryptocurrency community has so far latched on to one key metric - Total Value Locked (TVL). But TVL didn't actually start in DeFi.

In 2018, Bitcoin's Lightning Network, the second layer protocol being developed to address scalability, was very much in focus as the blockchain was bogged down for hours and fees had skyrocketed. At that time, looking at how much Bitcoin had moved into the Lightning Network was of great importance to prove the direction that the cryptocurrency was taking fit the original position of Bitcoin as digital cash.

TVL: How much is it really telling you?



This metric was later ported into Ethereum when investors began to look at the treasuries of blockchain projects that had completed an Initial Coin Offering (ICO). TVL eventually landed in DeFi with MakerDao's colletarlized debt protocol.

It is a badge of honor bestowed by the crypto community as faith in the platform. It's seen as demand and proof that the idea has a use-case. But is it truely a measure of growth?

Our Starting Point

Blockchain data up until recently was a luxury few would have access to let alone be able to understand and extrapolate what's really going on under the hood. There are though new data services such as Dune Analytics, DeFiPulse, CryptoQuant, Glassnodes, Chainalysis, and many more, that give every data point imaginable with a click of a button.

The problem however is that these numbers need more scrutiniy as there are many caviets at face value, as we'll explain in this report.

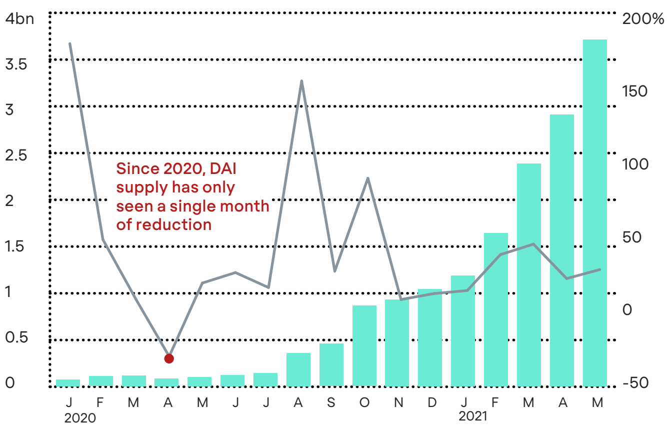
Seeing as platforms need assets to function, Copper used a popular metric very often used to value asset management firms - market cap to assets under management. This was our starting point which we further tweeked to look at market cap to outstanding debt, outstanding supply and in some cases, TVL.

Same, Same But Different

Decentralised Finance (DeFi) has become the posterchild use case for the cryptocurrency industry. And with good reason. Free markets are dictating the dynamics of possible returns and valuations based on demand and supply.

A select few projects kicked off the DeFi development bonanza. Outside of Decentralised Exchanges (DEX), which were met with a lukewarm reception at the very start, the DeFi space was primarily started by MakerDAO, creators of the Dai, a self-regulating stablecoin that matches itself as close to the US dollar as possible. There is now nearly $5bn in circulating supply.

MakerDAO's DAI Outstanding Supply vs Growth



But it wasn't until lending protocol Compound launched in late 2018 when the possibilities really began to unfold. It's not by coincidence that it's one of the most popular exposures made by industry pundits.

Despite DeFi's real start in late 2018, during a market downturn, the space has developed very quickly. DeFi now extends from borrowing and lending to fully decentralised asset management fund platforms to liqudity pools automatically moving assets across protocols to find the best return possible.

The majority of projects have tokens that power a certain aspect of the protocol. For DeFi, the use of the tokens has been primarly focused on platform governance and staking in return for interest.

One of the most popular metrics currently used in the DeFi space assesses how much the value of the Assets-under-Management is under each project commonly referred to as Total Value Locked, or TLV. This would be a simple and easy enough metric to look at.

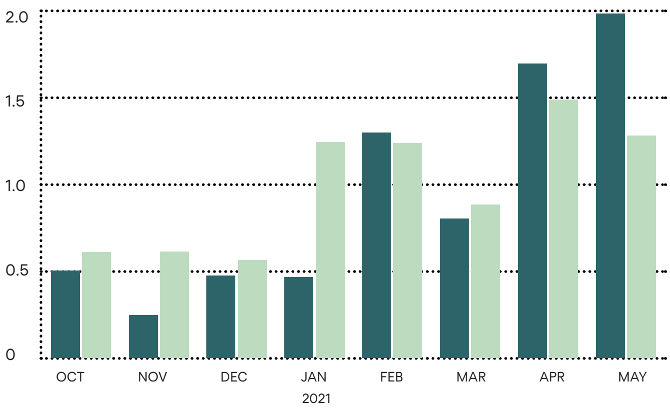
But at Copper we like to complicate our lives a little so we delved a great deal deeper to really assess project growth, competition, market share and token valuations across various DeFi sectors. Although the metric of Total Value Locked (TVL) isn't flawed per se, a project that has the same number of Ether from a year ago will of course show value growth in USD terms as the price has skyrocketed. It's not showing actual user growth.

Even Unique Users, another popular metric, is also flawed at face value as unique users is simply a unique address being used - and the same person can be using hundreds or even thousands of different addresses.

It is therefore best to assess each project with the growth of its actual intended use-case alongside TVL and user interactions with the protocols. And with more competition within each sector, valuations of the token's themselves becomes a little more clear against each other as they effectively create a relative valuation baseline.

The Market Capitalization to Outstanding Supply (MCOS) ratio is useful in the context of stablecoin issuers that have a token. For this particular example, mStable (which has a basket of centralized stablecoins assisting with the peg) also has its own token like Maker. While Dai has nearly $5bn in supply, mUSD is under $40mn. Network valuations are billions of dollars apart. And just as far apart is the value of the collateral.

MakerDAO vs mStable - Market Cap-to-Outstanding Supply Ratio



But what the chart impressively shows is that the outstanding value of the stablecoins versus the platform's valuation is neck-and-neck. Markets may be over-valuing one network more than the other at times using this metric, but they do show that network valuations can be extremely efficient in crypto for similar protocols. For 2021, the average MCOS ratio was a mere 2% off between the two.

Although this metric doesn't signal whether or not Maker is a value investment, it does show that markets are valuing competing networks for their core competency in the very same way.

Closer Comparisons

While the comparison with MakerDAO and MStable shows market efficiency, there are billions of dollars between them and their underlying mechanism differs. They have little real competition between them at this point in time.

However, there are now competing DeFi platforms worth examining. The two projects that have shown the largest usecase and demand have been lending protocols Compound and Aave.

Both these projects have self-balancing mechanisms for lenders to earn interest from borrowers. Both these projects have similar liquidity supplied. Both have representative governance tokens. But their network valuations are billions of dollars apart with Aave in the lead. But how have markets come to these valuations?

Optically, Aave's interest rates are significantly higher than those found on Compound. However, variable rates change and according to Defiscore, a website that assists investors with tracking rates on different platforms, the actual Return-on-Investment (ROI) is fairly close. This is primarely due to the advent of Yield Farming protocols that pool liquidity and automatically shift funds between platforms to optimize the best rate of return. In theory, larger use of such 'Yield-Farming' protocols will trend the difference of return to zero.

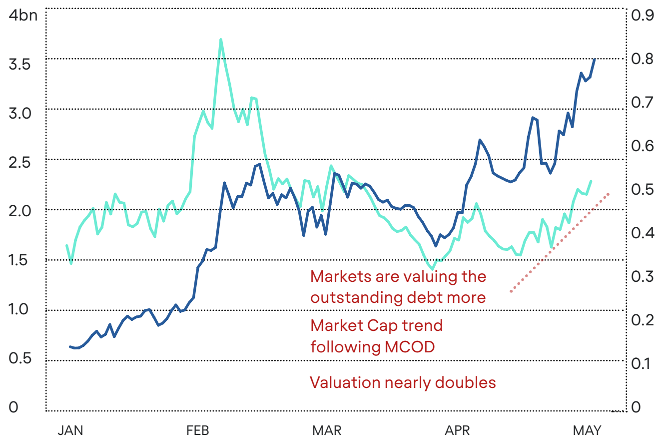
Still, regardless of Aave's higher interest rates, the platform's utilization of their liquidity - how much people are borrowing from their available funds - has averaged only 20% for 2021 versus Compound's 46%.

Copper once again focused on the core-competency of these platforms and the demand for it against their valuations. Looking at the Market Cap-to-Outstanding Debt (MCOD) ratio, data shows that markets have valued Aave more than there is actual demand for debt on their platform. The opposite is true for Compound, however (i.e. Compound has had more outstanding debt in USD value versus its network valuation).

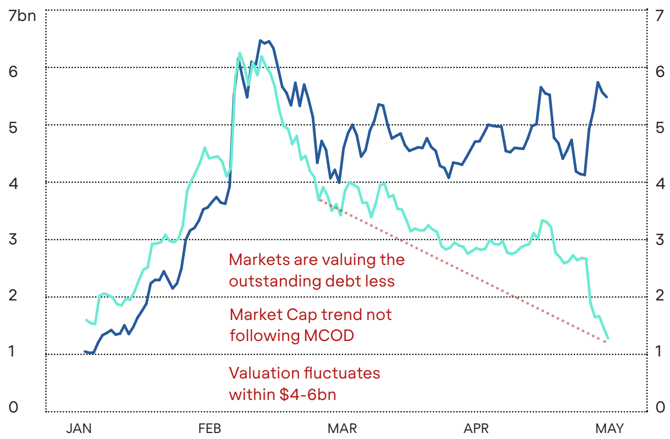
While we can't say whether or not Compound has been undervalued, or Aave overvalued, what can be gleaned from the data is that since mid-April, the MCOD trends have shifted in opposing directions (see charts). Markets are now increasing the value of the outstanding debt on Compound, and decreasing for Aave.

Furthermore, in theory, efficient markets would have valued each dollar in liquidity and each dollar in outstanding debt relatively closely. But the data shows that markets have valued the dollar on Aave much more than on compound by a margin. Dollar-for-dollar, the ratio is now plummeting. Markets are now valuing both

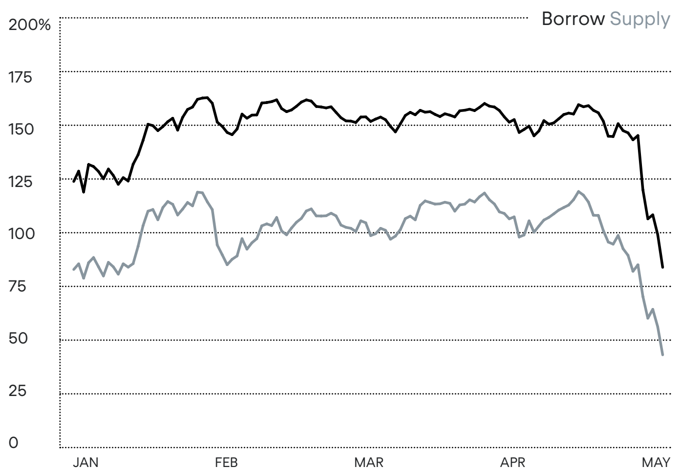
Compound: Market Cap vs Market Cap-to-Outstanding Debt



Aave: Market Cap vs Market Cap-to-Outstanding Debt



Dollar: Markets have valued $1 on Aave more than on Compound



How to read this chart: This chart is comparing how markets have valued Aave's liquidity and outstanding debt versus Compound. i.e At the start of this year, markets had valued each $1 borrowed on Aave by 125% more versus its market cap in comparison to Compound.

the liqudity available, and the borrowed funds less and less. At peak, markets had effectively said that the dollar on Aave that was borrowed was worth nearly 1.75×. It's now closer to 0.75×. These inefficeincy gaps are proving to close fairly quickly. While Aave's network valuation has bobbled between the same range for 4 months despite a massive increase in liqudity and demand, Compound has been steadily on the rise.

Where Size Matters

Decentralised Exchanges have seen the largest growth within the industry in terms of their key compentecy in providing market liquidity. And it's being utilized which is also of key importance.

In 2019, DEXs totalled $400mn in trading volume. As of this year, the average monthly churns is north of $46bn.

Total Value Locked is important, but not the only metric to consider. Assets pooled into a DEX but not being traded does not represent growth. But TVL does represent potential market liqudity. Both metrics – trading volume and TVL –are key in assessing market valuations for this particular DeFi segment.

Market Cap-to-Volume remain within close bands against competing platforms in comparison to other metrics seen in this report despite still having a difference.

Markets have increased the value of every dollar traded on Uniswap for example more and more this year as it not only maintained but grew its market share of the whole DEX market.

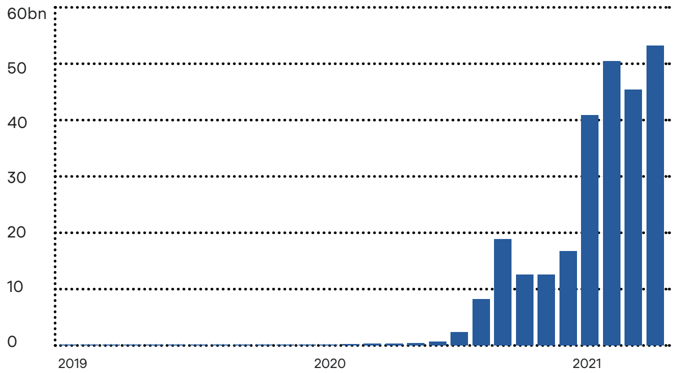
Whilst Bancor trails behind other large exchanges in terms of its market share, the platform has seen the largest growth from the start of the year till the end of April, increasing trading volume on its platform by 383% and its TVL by a huge 570%.

Markets have taken notice. Bancor's valuation has grown and markets are increasingly valuing the trading volume higher than other platforms on the average.

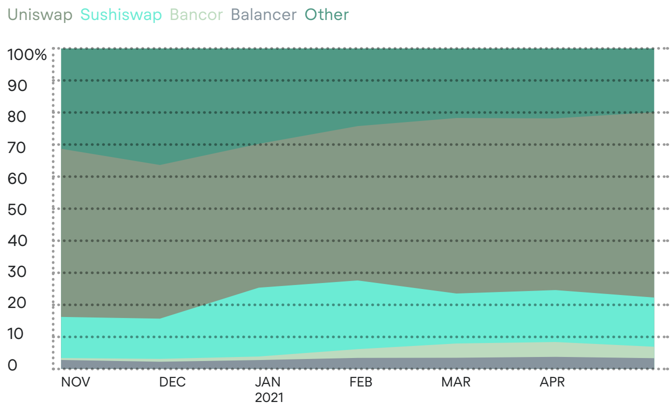
It is however Uniswap's liquidity that remains extremely highly valued by markets in comparison to other platforms. Its valutation and the end of April stands 344% higher in comparison to the TVL. In contract, Bancor's valuation is 37% less than the value of assets on the exchange.

The market assymetries can prove to be useful when assessing whether or not there is a value investment to be made. It is key however to compare growth with competition for the baseline valuation. Afterall, Uniswap has cornered over 50% of the trading volume and 40% of the TVL.

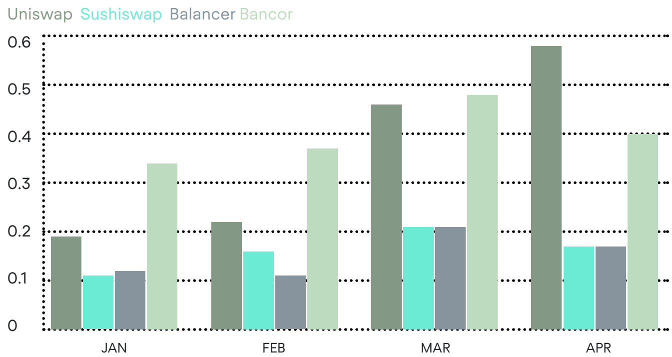
Decentralized Exchange Trading Volumes Soar in 2021



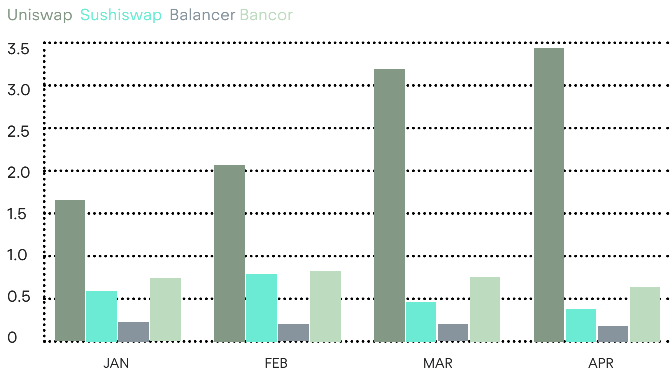
Market Share Across Major DEXs



Market Cap-to-Trading Volume



Market Cap-to-Total Value Locked



Next Big Thing?

DeFi has so far managed to garner the attention of the financial world as it continues to build out an extremly strong interconnected ecosystem that can challenge banks (lending protocols), central banks (MakerDAO) and exchanges (DEX).

The theme around the industry remains about investing and making the best possible returns. A logical next step for the DeFi industry is to attempt to challenge large funds.

Famed investor Mark Cuban has gone down the rabbit hole himself and has become much more vocal about the potential of cryptocurrency. In a [recent discussion] with WallStreetBets, the Reddit forum that stole media headlines as traders longed GameStop against hedge funds, Mr Cuban described blockchain-based governance of fund management as the next big opportunity.

Perhaps unknown to Mr Cuban, such a platform already exists. In fact, there are at least two decentralized fund platforms that are gaining incredible traction as of this year.

Enzyme Finance, which was rebranded and revamped from MelonPort when it originally launched, now has nearly 500 funds. dHedge almost 400. Both have similar fund creation structures. Both have seen TVL grow from under $5mn to over $20mn in a few short months.

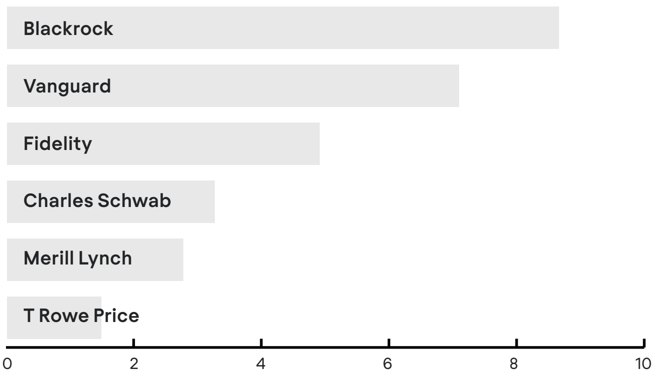
Valuations in comparison to the rest of the major DeFi platforms is still fairly small. dHedge in comparison to Enzyme is even smaller. While Enzyme's market cap stood just under $200mn at the end of April, dHedge hovered around the $20mn mark - ten times less.

But what might be the reason for such a large disparity in the market valuations? Is it an opportunity or are markets telling investors the real value? Afterall, at least two of the top 10 industry investors have a stake in dHedge (see table).

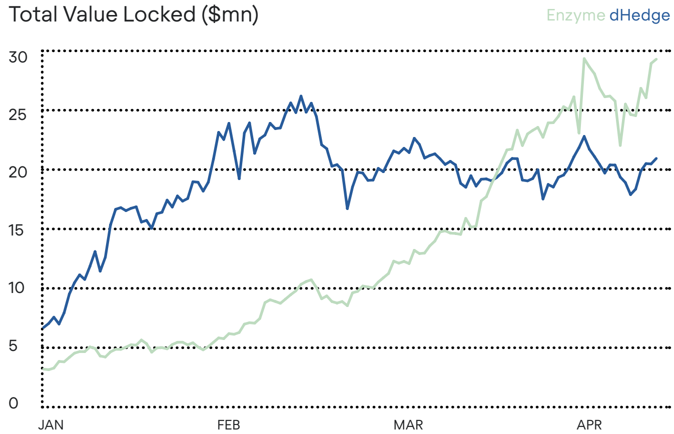
At face value, there should be no reason for this value disparity when looking at the data. But there are a few major differences and such metrics should be considerations not only for the aforementioned cryptocurrencies, but for every coin.

Firstly, Enzyme's community and platform have been around for over 2 years. dHedge only has 6 months under its belt. Secondly, Enzyme's token, MLN, is listed on Kraken, a top US exchange. dHedge's token has only been trading on some exchanges since February this year.

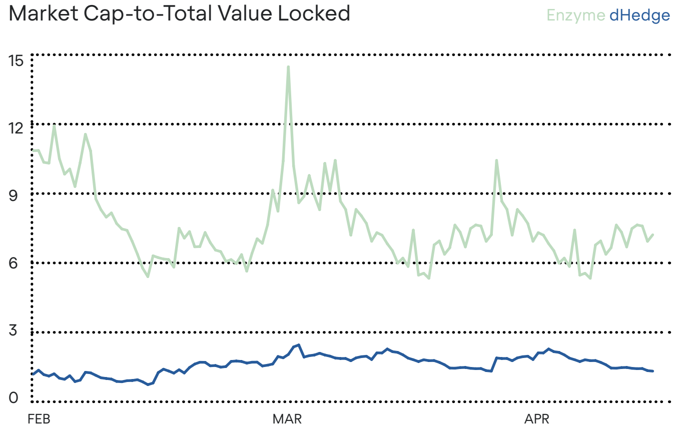
Assets Under Management by Largest Funds ($tn)



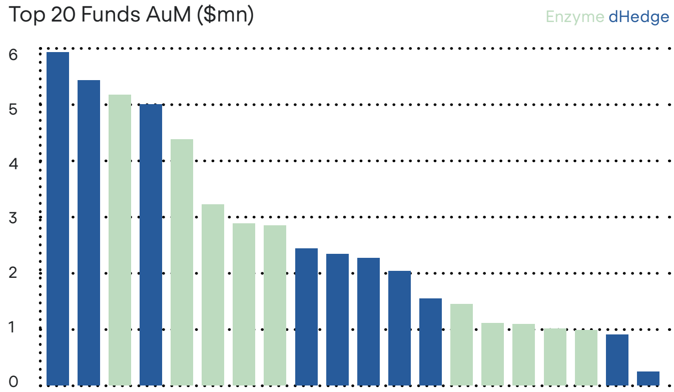
Total Value Locked ($mn)



Market Cap-to-Total Value Locked



Top 20 Funds AuM ($mn)



As of 16 May 2021

In any case, however, should Marc Cuban be right, these platforms are likely to gain a lot more interest. And despite current jurisdiction restrictions, it's not hard to imagine the potential of such platforms given the fact that even stocks are finding their way onto the blockchain.

Finding Value Investments

The metrics designed in this report by Copper are certainly up for further study. They are however reasonable measures in assessing platform valuations against competing protocols, and possibly finding value where market capitalisation is not inline with real demand.

The DeFi space is by and far the most pure form of free markets. And with competition increasing, current valuations will be tested as new protocols create a baseline comparison point of reference.

There are factors that will require investors to have a specific viewpoint as numbers will not always be telling of the full picture. With decentralised governance, the participation and outlook of the community become increasingly important.

In traditional terms, cryptocurrency governance of platforms is near equivalent to stockholder voting rights. Unfortunately, it is a right seldom used by investors. Crypto, however, has made participation and governance very feasible. It's not only decentralised, but democratised.

Better Metrics, Less Correlation?

Markets are still highly correlated, as seen once again most recently with Bitcoin's latest plunge below the $30,000 territory draging every crypto alonside with it.

Better metrics that will be available to investors could potentially aid markets in breaking away from such high correlations. Should correlation stick during a downturn, better metrics would help investors make a fairly strong arbitrage decision for under-valued platforms based on their actual growth and demand.

The industry already understands where protocols can be useful. At the end of April following US President Biden's tax plan announcement that caused Bitcoin to drop, Compound's token actually went up. Better metrics will likely help investors in other inevitable upcoming scenarios and break away from the symbiotic relationship with the store-of-value narrative.

The crypto industry is now flush with data. It's good time we use this data to create metrics that will aid the next wave of investors.

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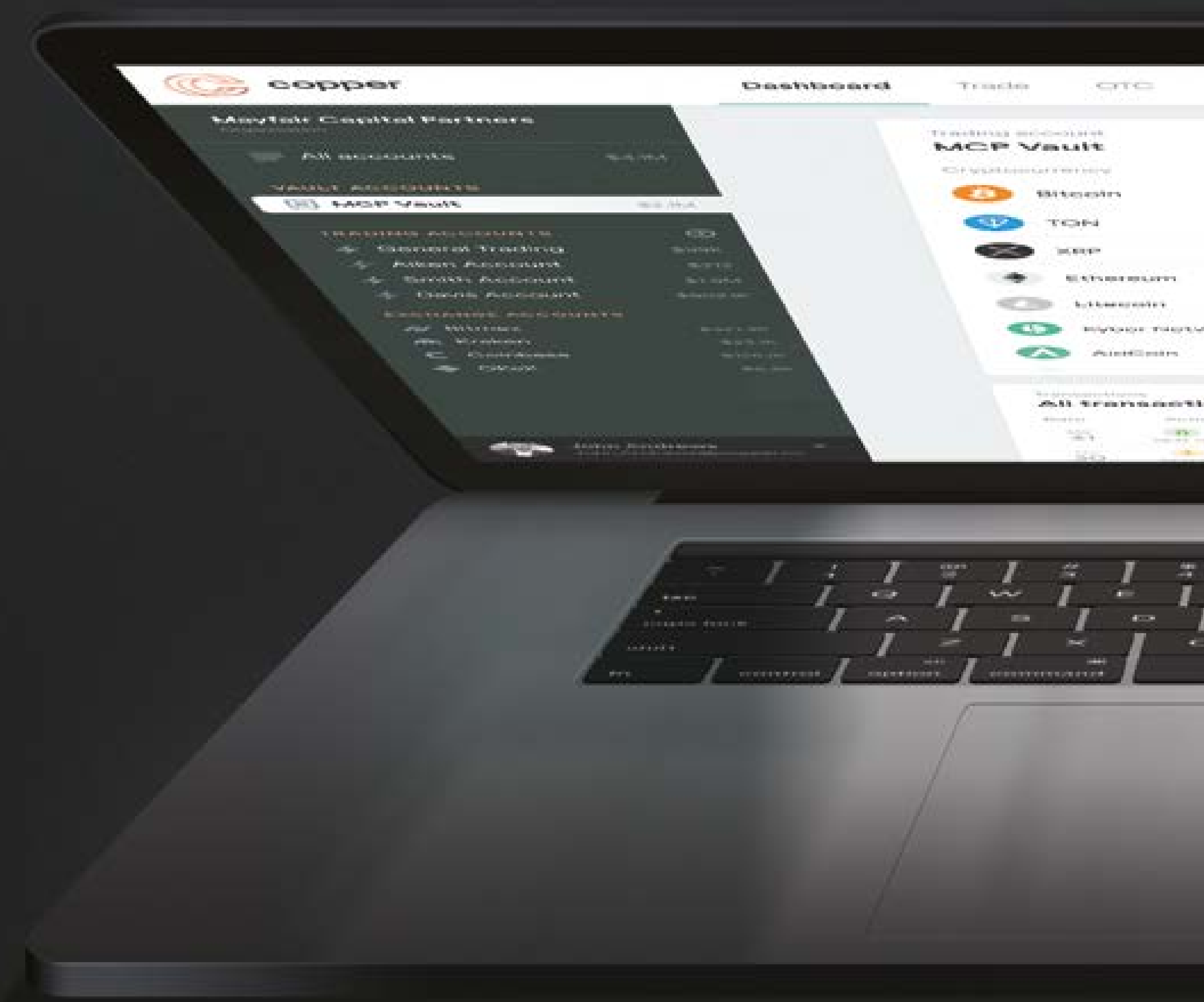

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