



Tokenomics Deep Dive



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Key Takeaways

- ◆ Tokenomics can be defined as the study of determining and evaluating the economic characteristics of a cryptographic token
- ◆ Key aspects of token supply: Allocation, vesting period, and emission
- ◆ We find that Layer 1s have seen Public Sales token allocations go down in favor of higher allocations towards Ecosystem Incentives in recent years
- ◆ Centralized risks, participation rewards, and Foundation design are key questions every founder needs to answer
- ◆ Data shows that vesting periods and cliff lengths have generally increased over the last couple of years. Traditional technology companies appear to be taking the opposite route
- ◆ While most Layer 1s are inflationary, we note a few that employ burn mechanisms. Understanding the emission schedule of a token is crucial, illustrated by case studies on high FDV / low market capitalization tokens and high DeFi APRs
- ◆ Companies are increasingly using interesting distribution methods to allocate airdrops. We highlight a few recent cases, including Hop Protocol and Optimism
- ◆ Many protocols underestimate the demand side, paying too little attention to the incentive function of the token
- ◆ Transparent and healthy governance can offer a lot of utility and drive token demand
- ◆ Trust plays an essential role in the utility of tokens
- ◆ Tokenization represents a form of digitalization of value. The utility comes from a token fulfilling one of multiple purposes

- ◆ A two-token model helps to specialize the use cases for each token by separating the “ecosystem” from a purpose-solving token
- ◆ In the long-run good projects with strong fundamentals and product-market fit will always win over those with bad fundamentals

Introduction

To put it simply, **tokenomics can be defined as the study of determining and evaluating the economic characteristics of a cryptographic token.** The goal of the analysis would be to best understand how various incentives affect the supply and demand of a token and, ultimately, its price. Tokenomics as a concept is somewhat of an unsung hero among successful investors in that a good grasp of different design mechanics and the ensuing economic incentives (or disincentives) can truly help one evaluate the potential for value accrual for a given token. **In this report, we explore both the supply and demand dynamics of tokens and deep-dive into the many facets of token design.** We believe that having a good understanding of both supply and demand is vital when creating a sustainable crypto protocol. While the product is always more important than the token itself, we should not underestimate the impact tokenomics can have. **Many projects have failed despite a good product (or succeeded despite a mediocre one) due to bad (good) tokenomics.**

The Basics

Before delving deeper into the topic, we should take a step back and answer the all-important question of, **why does a company even need a token in the first place?**

We think the underlying motivation can be broadly divided into **economic** and **structural** drivers. On the economic side, **tokens help by raising capital for the business to grow, with added benefits that might not be possible in other forms of capital raising.** For example, a significant advantage of token fundraising over equity raising is that it **allows early contributors/adopters to invest in the project and gain upside**, whereas only accredited investors are traditionally able to invest in equities, particularly at the initial public offering (“IPO”) stage. This might take many years, usually far longer than it would take to create and distribute a token. This level of inclusivity and potential for active community governance can be an important factor for both company founders and investors alike. The potential for early user/adopter upside is also a **very advantageous tool for marketing purposes** and can perhaps be one reason why we see increasing token allocations towards early adopters (see allocations section below). Additionally, given **smart contracts allow you to program mechanisms into tokens, we have a distinct technical advantage over traditional market securities.** This means that tokens can be more dynamic in their nature and provide more use cases than alternative means of funding. It also means that there are a lot more variables to investigate and pay attention to when analyzing the tokenomics of any project.

On the structural side, **tokens can serve as important pillars for governance and can be effective tools to decentralize a protocol**, most commonly via a decentralized autonomous organization (“DAO”) structure. **Tokens can also ensure incentive alignment**, with all parties, including infrastructure providers, users, and the development team benefiting and being motivated to keep growing.

Naturally, good token design is crucial to achieving the best outcomes, and poor design can be just as detrimental to a company as can an excellent design be beneficial. Ultimately, subsidization via a token can only happen if the token holds some value in the open market, which in turn, can only happen if the token is effective in capturing the value generated by the protocol itself or offers another form of utility.

Supply



















When analyzing the supply side of the equation, a couple of the key questions that we are trying to answer are “Based on supply dynamics alone, how should I expect the price of a given token to behave?” and “Will the token become more scarce, or is value likely to deteriorate via inflation?”.

Keeping these in mind, we can analyze three different aspects of token supply and how they affect tokenomics: **allocations, vesting period, and emissions**.

Allocations

Allocations are conventionally split among a few key parties:

Figure 1: Key Token Allocation Parties

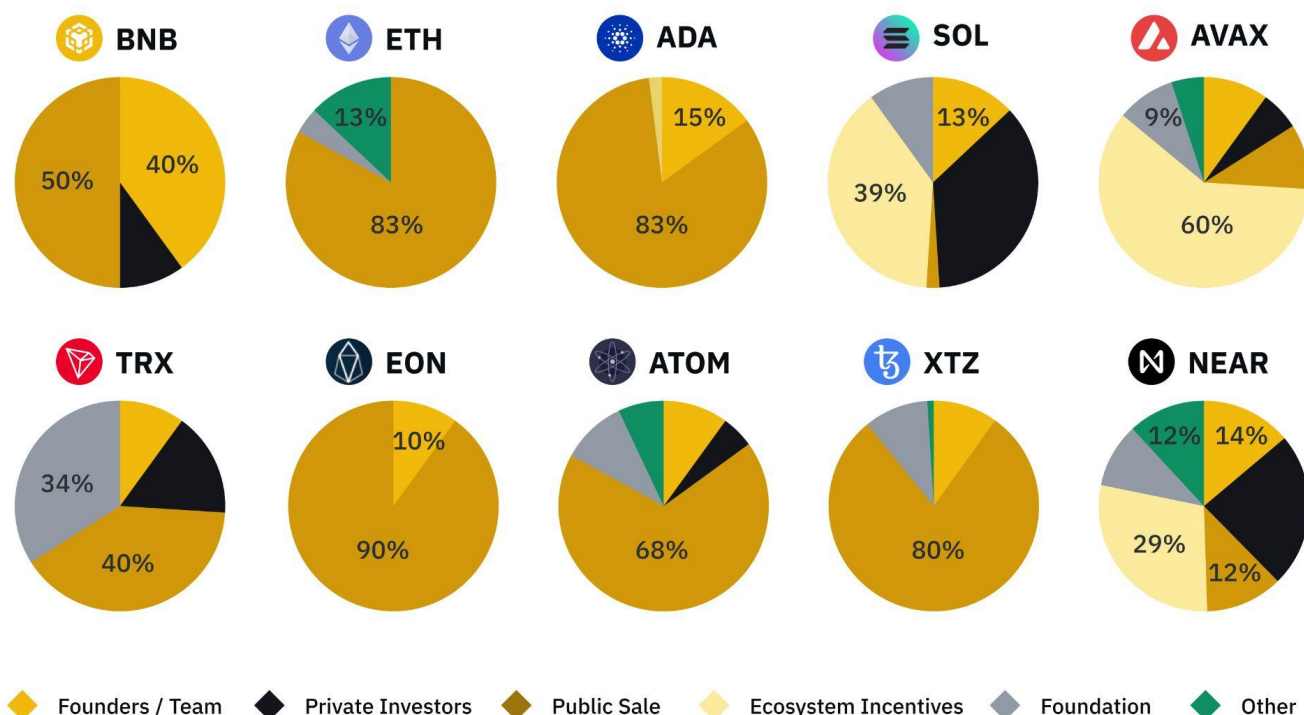
Key Party	Details	Examples
Founder / Core Team	often, these allocations are subject to longer lockup periods relative to other parties	   
Private Investor	referring to any private buyers including VCs, seed investors, company partners, etc.	   
Public Sale	whether via ICO, IDO, IEO, public auction, etc.	  
Foundation	allocated in order for the non-profit to support the token and ecosystem	  
Ecosystem / Incentives	including ecosystem grants, airdrops, yield farming, staking - essentially funds earmarked for the community	 
Other	charity allocations, allocations to strategic partners, early ecosystem participants etc.	 

Source: Binance Research

While different projects label their allocations in different ways, the above categorization can serve as a broad overview of the key parties involved in token allocations.

To provide some data to better contextualize this aspect of tokenomics, we highlight the initial token allocation for a selection of L1 tokens:

Figure 2: L1s have seen Public Sales allocations down in favor of higher allocations towards Ecosystem Incentives



Source: Binance Research

Key Takeaways:

- ❖ **Public Sales allocations have been trending down in the last few years**, clear in the difference between the likes of BNB, ETH, and ADA, when compared with the more varied allocation of the newer L1 tokens e.g. AVAX, NEAR. It should be noted that both BNB and ADA were launched in 2017, in the midst of the ICO boom, which had very much winded down by the time of AVAX and NEAR's launches in 2020
- ❖ **Ecosystem Incentive allocations are materially higher than in earlier years**, somewhat replacing allocations towards Public Sales. The earmarking of tokens for more value-accretive purposes makes sense from a protocol perspective and can be an effective way to incentivize market participants to work on improving a product

- ❖ **Allocations to Early Adopters/Developers are on the rise**, coinciding with the increasing noise around community rewards, which has become more of a discussion topic in recent times following the revival that token airdrops have seen (See Airdrops section below)

While no particular allocation serves as a “one-size-fits-all” model for upcoming projects, and clearly projects have chosen to go down very different routes, there are some basic ideas to think about when considering token design. Founders can definitely retain some optionality and do not have to follow a set route, but **we think there are some key questions that any crypto entrepreneur can ask themselves when deciding upon the allocation of their token.**

- ❖ **Centralization Risks:**

- *Are too many tokens concentrated among the Founders and Private Investors?*
 - **Our data showed a ~32% average among our selection of L1 tokens**
- *If a significant amount is allocated towards Ecosystem Incentives / Foundation / Other, which party has control over this?*

- ❖ **Participation Rewards:**

- *Do you want to reward early adopters / developers? Is this best done via airdrop / direct allocations?*
 - **Our data showed L1s demonstrating increasing interest in this category, with newer chains like NEAR segmenting significant portions of tokens for early users**
- *What is the best balance between rewarding early usage versus keeping tokens for future incentives?*

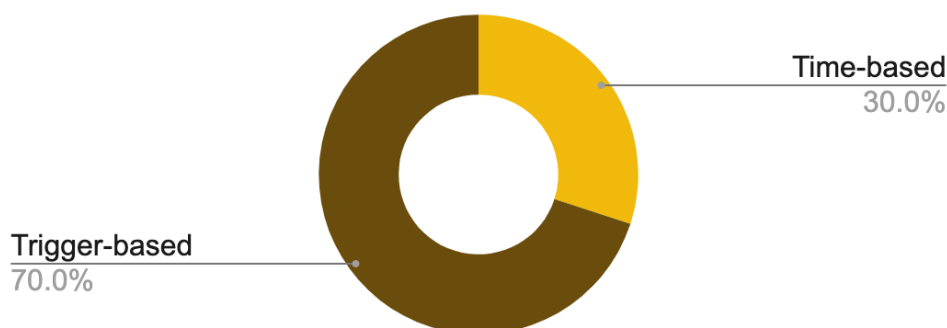
- ❖ **Foundation:**

- *How much supply does the Foundation control? Does the Foundation have any community vote feature or is it privately run?*
 - **Our sample had a ~11% average for Foundation allocations**
- *Is there a significant overlap between the core team and the board members of the Foundation?*
 - **Our sample showed mixed results here. While some projects have strictly no overlap, others have historically been more relaxed**

Vesting Periods

The **vesting period** refers to the time period where the sale of a token is restricted after **initial distribution and is commonly also called the lockup period**. The tokens are traditionally unlocked at regular intervals during a given period, with these intervals differing in length depending on which type of token holder it is, and of course, differing between projects. The vesting can be typically divided into two primary categories; **time-based vesting and trigger-based vesting**. While a time-based vest begins at some agreed-upon date, trigger-based vesting is typically kicked off following a token generation event, a mainnet launch, or the listing of the token.

Figure 3: Trigger-based vesting is more common



Source: Binance Research, [Lauren Stephanian](#)

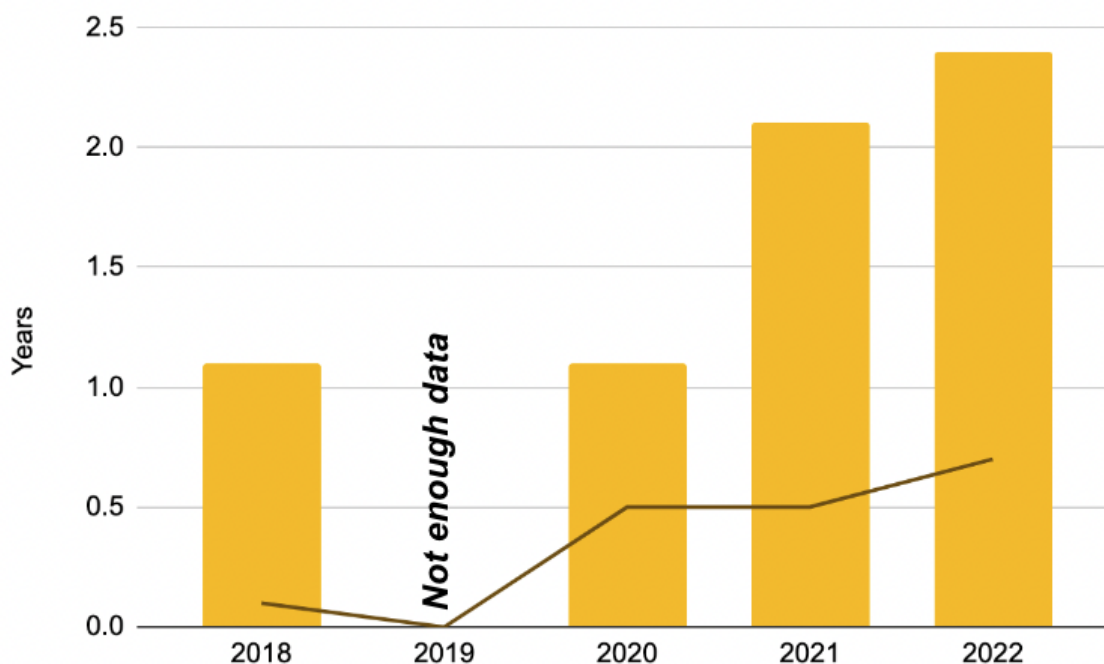
Token lock-up periods are important incentivization tools to ensure that developer and insider motivations are aligned with those of token buyers. They are also used to prevent large fluctuations in price, which could come from early investors dumping near the start of a project, and further on, it can also mean that **investors can plan for price fluctuations in advance of a major token unlock date**. The importance of lockups and vesting must not be underestimated, and academic literature is supportive, with [S.T. Howell et al. \(2019\)](#) finding that having vesting schedules in place for top managers' holdings made token failure less likely.

“Token lock-up periods are important incentivization tools to ensure that developer and insider motivations are aligned with those of token buyers”

Outside maintaining a baseline level of lockup and vesting, an innovative way that a project might implement further lockups might be via **offering higher levels of discount for longer lockups**. For example, [Filecoin](#) (“FIL”), in both their Pre-sale and Public Sale, offered increasing discounts for investors agreeing to vesting periods from 6 months up to 3 years. Interestingly, a case study⁽¹⁾ on the ICO found a notable difference in preference for vesting periods between strategic investors and public investors. A significant number of public sale investors had a strong preference for the lowest vesting period possible (6 months) versus strategic investors who agreed to the much longer vesting schedules. Given this indicates that the public sale investors were more likely to be active in their trading of FIL, versus strategic investors who were in a more “buy-and-hold” mindset, we might have one factor to explain how token allocations have evolved from a focus on public allocations, to ecosystem incentive allocations.

In terms of market trends, in an analysis of 150 different data points referenced below, Lauren Stephanian found that **both lockup periods and cliff lengths have increased over time**. This might reflect more favorable conditions for investors, who might be more swayed towards projects whose team reflects a long-term commitment mindset. The changes can also be looked at as indicative of the bear market as well as the decreased competition from more casual generalist investors. Regulatory pressures, particularly in the United States, should also be considered, as increasing hostility can easily lead to longer cliffs and lockups for all parties.

Figure 4: Lockup period and cliff lengths have increased over time



Source: Binance Research, [Lauren Stephanian](#)

In the broader labor market, the **recent trend among companies has been to reduce vesting periods and front-load vesting** much more than before. Traditionally, employees (particularly of technology companies) have been offered equity grants with four-year vesting, alongside a one-year cliff. Several notable companies, [such as Lyft and Stripe](#), recently changed their models to change this to a one-year vesting schedule, with some other companies forgoing the cliff altogether. For both parties, this provides a higher degree of flexibility and eases the proverbial “golden handcuffs”, although, given the change in incentives, employers might be more prone to a higher degree of turnover.












We should, of course, note that **both the labor and investing market view traditional technology companies as quite different from crypto companies** for a number of reasons, so the vesting schedules are not entirely comparable. We should also **note the difference in the level of scale between these vesting schedules** i.e. employee stock schedules reflect relatively small amounts of dilution, even in large companies, when compared to the more bulky dilutions that can result from, for example, 20% of founder tokens vesting in one year. Nonetheless, as far as industry comparisons are concerned, technology companies remain an interesting and relevant contrast and can contribute to a view of how the market may evolve.

Vesting periods remain important in both the crypto world and traditional securities markets. The crypto markets seem to be developing a preference for longer vesting periods and cliffs, a view that we share given the confidence this can build in the community. However, it should be understood that **vesting periods are a balancing act, and while longer lockup periods for certain groups can be beneficial, enough tokens need to be vested to ensure operations and incentives are funded** and working as they should.

Emissions

Emissions refer to the rate at which crypto tokens are released. Depending on the **emission (or burn) rate and how it changes, you can work out the relative inflationary (or deflationary) pressures that the token is likely to face** in the future. Emissions, burns, and other governance actions that impact supply can collectively be called the **monetary policy of a token**, and as you would expect, this varies widely across the market.

Figure 5: Most L1s are inflationary, and few employ burn mechanisms

Token	Supply Cap?	Emission Type	Notes
	Yes: 200M	Deflationary	Quarterly BNB Burn + gas fee burn mechanism
	No	Inflationary*	Due to EIP-1559, at times of high network activity, more Ether is burned than is issued, making it deflationary at times
	Yes: 45B	Fixed Supply	Unlikely to implement token burns**
	No	Inflationary	-
	Yes: 720M	Fixed Supply	Transaction fees are burned
	No	Inflationary	-
	No	Inflationary	-
	No	Inflationary	Annual inflation capped between 7 - 20%
	No	Inflationary	Max annual inflation of 5.51%
	No	Inflationary	<ul style="list-style-type: none"> 70% of transaction fees are burned. For NEAR to become deflationary, it would require close to 1.5B transactions per day. To date, this number has never exceeded ~1.8M⁽²⁾ Annual Inflation around 5%
	Yes: 10B	Fixed Supply	-

Source: Binance Research

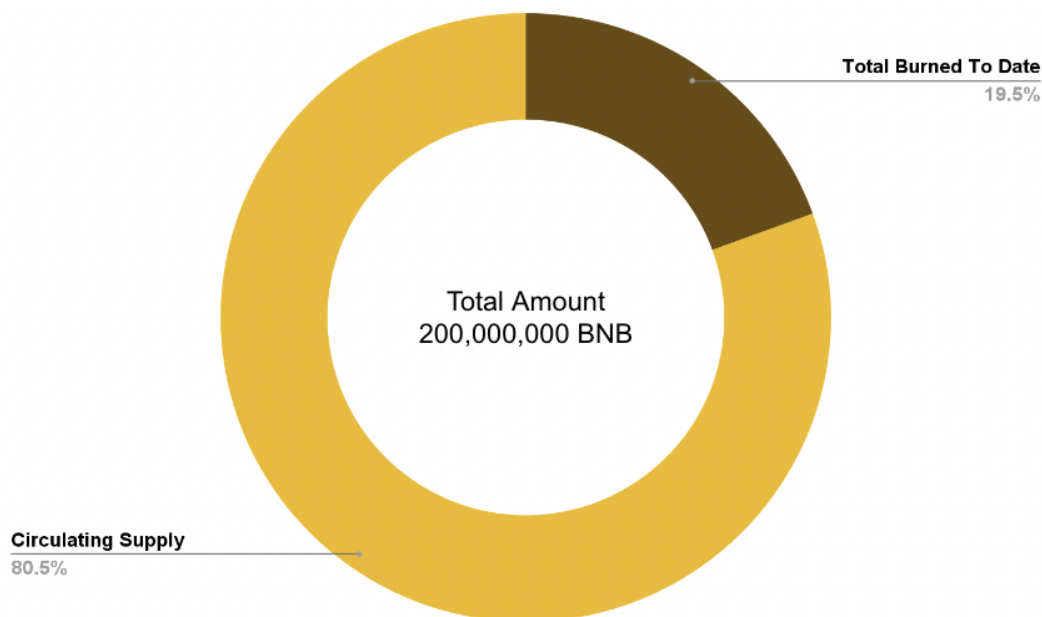
*although this is likely to change, as the combination of EIP-1559, as well the expected changes from The Merge i.e. reduced ETH issuance, should create a level of deflationary pressure

** as stated by co-founder Charles Hoskinson in a number of interviews

Emissions are typically distributed as part of block rewards, which are rewarded to miners or validators who are securing the chain. Some projects will also subsidize growth via inflation and issue tokens towards ecosystem incentives or to strategic partners. The basic laws of supply and demand are sufficient in deciphering the expected outcome of such a growth strategy.

Emissions can also be a result of transaction fees, which can be burned or sometimes rewarded to validators (or some combination of the two). Depending on network usage, if sufficient burning takes place, it could overpower the inflationary effect of block rewards and thus cause deflationary pressure on a token. This is what **BEP-95⁽³⁾ did for BNB in the Bruno Upgrade, and EIP-1559⁽⁴⁾ did for Ethereum in the London Hard Fork**. The burning of transaction fees is an interesting token mechanic and can function as an effective way to tie together emissions and network usage i.e. deflationary at times of high usage and inflationary at other times. When combined with regular and scheduled token burns, like BNB, for example, the overall effect can be quite significant, and the mechanic can be an important additive to token value accrual.

Figure 6: BNB's Auto-Burn system, combined with BEP-95 gas fee burns, have been effective in increasing the scarcity of BNB



Source: bnbburn.info⁽⁵⁾
As of 22 Aug 2022

While some critics have voiced their opposition to token burns, citing the value of the asset as a reason to preserve it, we tend to be on the side of economic principles on this topic. **With increasing demand and a shrinking supply, the scarcity created and the resulting benefit to stakeholders is unquestionable.**

“With increasing demand and a shrinking supply, the scarcity created and the resulting benefit to stakeholders by token burns is unquestionable”

We do not have to look far in crypto to see direct analogs, simply analyzing Bitcoin and its block halving⁽⁶⁾ schedule should be evidence of the importance of maintaining scarcity and the intrinsic value it brings. In terms of the Traditional Finance (“TradFi”) world, share buybacks (which should be considered an analogous activity) are going from strength to strength, already surpassing⁽⁷⁾ the record high numbers of 2021.

FDV vs. Market Capitalization

Closely related to emissions, and an important aspect to take note of is the comparison between the FDV of a token and its market capitalization (“market cap”). While market cap simply takes into account the current circulating supply, **FDV also factors in the maximum supply a token will ever have i.e. $FDV = \text{maximum supply of a token} \times \text{current market price}$.** Naturally, this means that FDV is only a relevant metric when analyzing tokens that have a fixed supply e.g., Bitcoin or BNB, and is not relevant for tokens that either have no supply cap or have a fixed initial supply which could be changed depending on governance decisions.

Scrolling through [CoinMarketCap](#), it is clear that many of the top projects have market cap and FDV at roughly similar values. For example, taking the example of Bitcoin, the current price (as of 22 August 2022) is ~US\$21K, while the circulating supply is ~19.1M. This brings our market cap to US\$406B. How about FDV? As most of us hopefully know, the maximum supply of Bitcoin is very famously 21M coins, bringing our FDV to ~US\$446B. From an investor’s point of view, the **similar valuations of the market cap and FDV are a positive signal and indicate that while some dilution is expected, the inflationary pressure is not extortionate and known well in advance.**

The issues arise when we see a large differential between market cap and FDV. As you would expect, this implies a large amount of supply to come in the future i.e. significant inflationary and selling pressure for the token. The valuation represented in the high FDV number will at

some point be unlocked and it is important to understand how and when this will happen. For example, a number of prominent Solana ecosystem projects have fielded this criticism (see table below).

Figure 7: A number of Solana ecosystem projects have a relatively high FDV / market ratio

Chain	Project	Circ. Supply (M)	Max Supply (M)	Circ. Supply / Max	Market Cap (\$M)	FDV (\$M)	FDV / Market Cap
Ethereum	Compound	7	10	72%	350	485	1.4x
Fantom	SpookySwap	9	14	69%	12	33	1.5x
Avalanche	Trader Joe	316	500	63%	85	135	1.6x
BNB	Venus	12	30	41%	68	167	2.5x
Avalanche	Benqi	2686	7200	37%	35	95	2.7x
Solana	Raydium	129	555	23%	93	399	4.2x
Solana	Orca	21	100	21%	18	85	4.7x
Solana	Star Atlas	22	360	6%	9	158	16.7x
Solana	Serum	263	10000	3%	212	8203	38.6x

Source: CoinMarketCap, Binance Research

For an individual analyzing the tokenomics of these projects, it is crucial to have an understanding of the emission schedule. **What does the scheduled release look like for the remaining coins? Will circulation double in a short time period, or is it a longer-term schedule? How much dilution is expected and how quickly?**

Of course, having a large amount of supply yet to come to market does not entirely ruin a project. It is very possible that, depending on token utility, the extra supply gets absorbed into the market, and valuations are not affected as harshly as forecast. Hopefully, this helps highlight the fact that tokenomics is not something to be looked at in isolation, but rather as part of a more holistic analysis of a project.

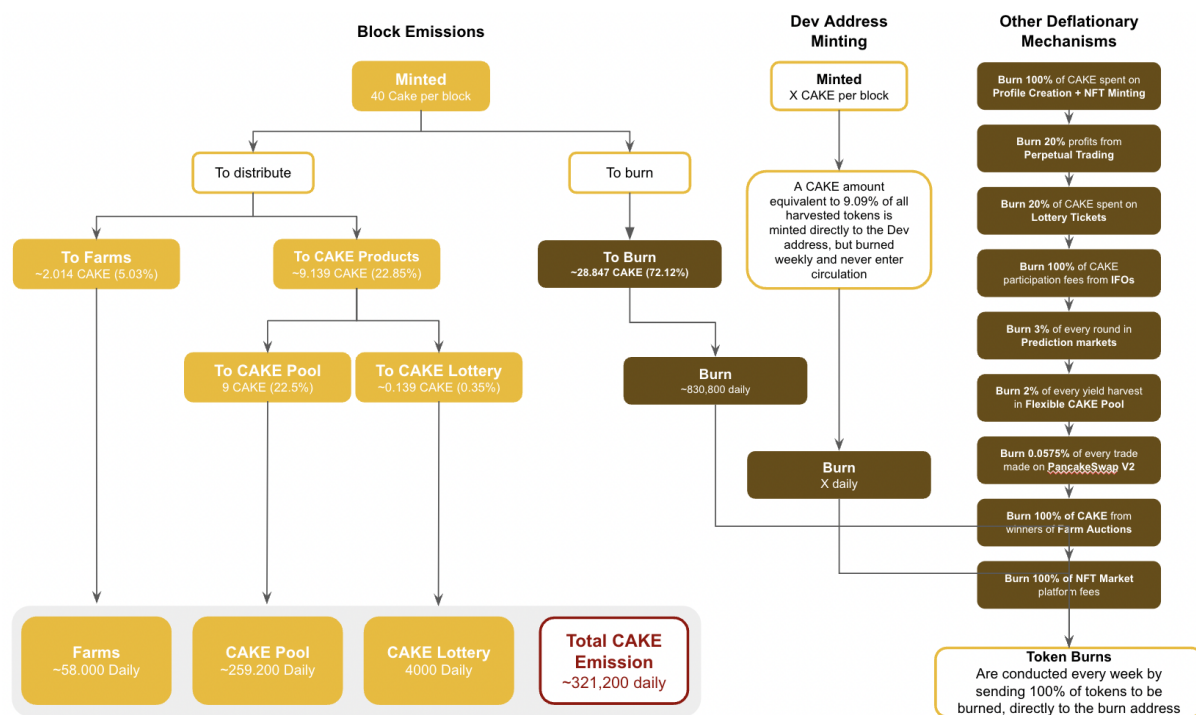
DeFi APRs

Since the Decentralized Finance (“DeFi”) Summer of 2020, one thing the sub-sector has been known for is the extremely lucrative investing strategies that are offered daily. Many of the

strategies, including optimization of staking rewards, participating in lending pools, or providing liquidity for exchange fee rewards, traditionally offer relatively reasonable interest rates.

On the other side of the spectrum, users can generate more bountiful yields by providing liquidity to DeFi incentivized liquidity pools or DeFi yield farms. These strategies involve users providing liquidity to pools (often for new or recently-launched tokens) and, in turn, being rewarded with additional tokens, generally with extremely high APRs. **Some protocols utilize initially high and then gradually slowing emissions to attract and build up a solid initial user base.** [PancakeSwap](#) is a notable example of this. While the protocol had taken criticism regarding emissions in its earlier days, it has since introduced a number of deflationary mechanics into the token (more below). Unfortunately, **other protocols may not be so sensible and do not ever taper their emissions until eventually the inflationary growth becomes too much to sustain and a virtuous downward cycle erupts** e.g. Iron Finance. This is something to note when looking into the tokenomics of any protocol offering APRs that seem a bit too high. As always, if it looks too good to be true, it probably is!

Figure 8: PancakeSwap very actively communicates its tokenomics and explains emissions and deflationary mechanisms clearly



Source: PancakeSwap Docs⁽⁸⁾

Airdrops

Airdrops have gone through somewhat of a revival since 2021 after notably cooling off in popularity since peaking in 2018. Rather than go through a tedious description of the origination of the distribution method and the earlier iterations, we thought it would be more beneficial to explore a few of the more interesting distribution strategies companies have used to allocate their airdrop. **One of the issues this method has faced is one of users trying to “game” the system and farm the airdrops.** If these so-called Sybil attackers are able to gain an undue share of the token allocation, it can be quite damaging to a protocol, especially if governance issues are involved - or simply, due to the potential for price dumps. To combat these issues, we have seen an increasing focus from protocols on identifying these actors and taking action. A few notable examples below:

❖ Hop Protocol

- Cross-chain bridge, Hop Protocol, was particularly focused on combating Sybil attackers from their token
- After cutting eligible addresses by nearly 25% using their own bots, they **announced a two-week period where they would accept community reports of Sybil addresses** that have slipped through the cracks. Members would be rewarded with 25% of the tokens saved (1-year lock-up). This initiative generated a significant response and **recovered nearly 1 million tokens in just the first week**
- In what was dubbed a “first” for airdrops, the Hop team went as far as to **invite Sybil attackers to self-report**, again, offering 25% of the recovered tokens as a reward

❖ Optimism

- Leading Ethereum Layer-2 solution, Optimism, announced their [OP token](#) in late April and confirmed that **19% of the total supply will be distributed via a number of airdrops**
- After initially identifying ~250k wallets as eligible for Airdrop #1 following screening for potential “airdrop farmers”, they **went on to later recover and redistribute tokens from an additional 17,000 wallets of later flagged Sybil attackers**
- Some of these were identified by Optimism community members, while others were flagged for “suspicious” L1 and/or L2 activity

❖ Lockdrop

- Lockdrops are a close relative of the traditional airdrop and can function as an effective alternative, **choosing to focus on the future of a protocol, rather than past engagement** (which is often what airdrop criteria are based upon)
- Lockdrops essentially **require commitment from the user** to receive the tokens. For example, **users could be asked to lock up BNB for some period of time and then receive the protocol's new tokens as a reward**. Often, the longer the user locks up the BNB, the larger their token allocation for the new token
- You can also further commit the lockdropped tokens to a liquidity pool to receive additional rewards and help with token price discovery
- In comparing the two distribution methods, **lockdrops might be more suitable for building an engaged community, while airdrops might be able to cast a significantly wider net in terms of protocol marketing** and brand awareness

Demand

There are two sides to each coin. Since we have covered the supply side in detail in the above-mentioned sections, we should now look closely at the demand side to get a full picture of tokenomics.

Since the demand side of tokenomics is less straightforward, we should use this opportunity to also touch on other aspects impacting tokenomics, such as the **governance of projects, the different approaches to share revenues, and the utility of tokens.**

Many protocols underestimate the demand side by paying too little attention to the incentive function of the token. The incentive function can be seen as the function that drives demand or incentivizes people to buy and ideally hold the token. It is often tied to some utility the token might have, such as governance, yields, or access to some type of service. For example, Curve's veCRV lets you vote on protocol decisions, xSushi provides you with yields from Sushiswap, and LINK lets you use Chainlinks oracle services.

“Many protocols underestimate the demand side by paying too little attention to the incentive function of the token”

Without token demand, supply itself would be of no value. Despite many important aspects of how to design a token supply, there has to be a need to hold a token. Utility, as mentioned above, plays an important role. Aspects like interest alignment add an additional layer of value. **However, let's not forget that without a good product, even an excellent token design and utility are of little value.**

Governance

Governance plays an important role when it comes to tokenomics. While **transparent and healthy governance can offer a lot of utility and drive the demand for a token**, there are also a lot of other aspects to consider here.

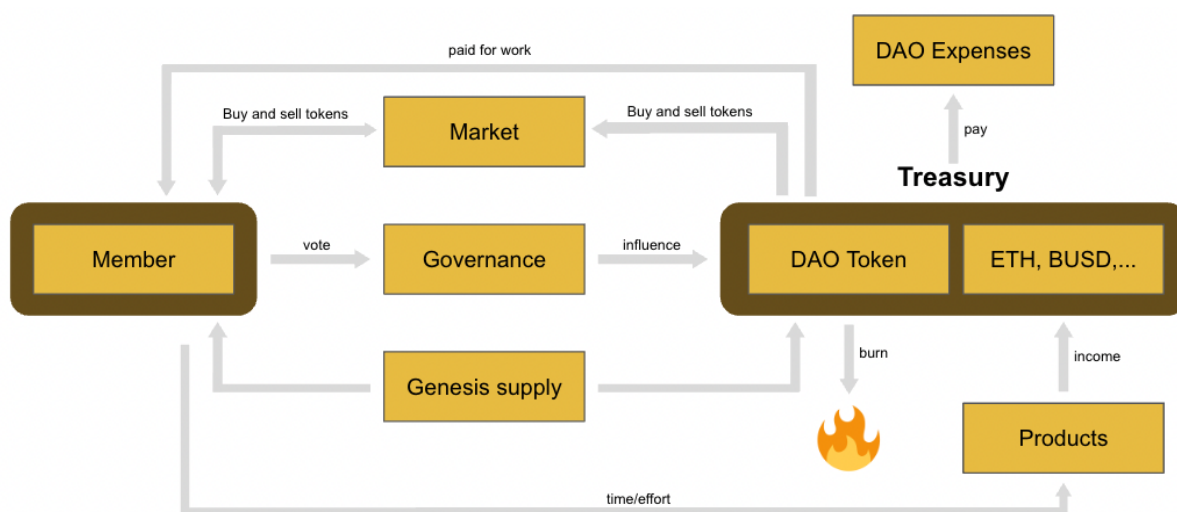
There is value in having a native token for your project that can be used to govern the protocol. This can help to separate different protocols and offer security to the community. For example, if a bad actor would want to vote on something that is destroying value for the project, he would consequently destroy his own wealth in the process.

Token governance allows for development and growth, and community engagement through so-called [decentralized autonomous organizations \(“DAOs”\)](#). There are examples of two-token models where the governance is separated from another token that could, for example, be used for purchases, and we will touch on these models in more detail later on.

“Transparent and healthy governance can offer a lot of utility and drive the demand for a project”

When thinking about governance - given the importance of decentralization and the aim of high participation rates - this is a crucially important area for every protocol.

Figure 9: Members and Treasury are crucial components of DAOs, often linked by a token.



Source: Binance Research

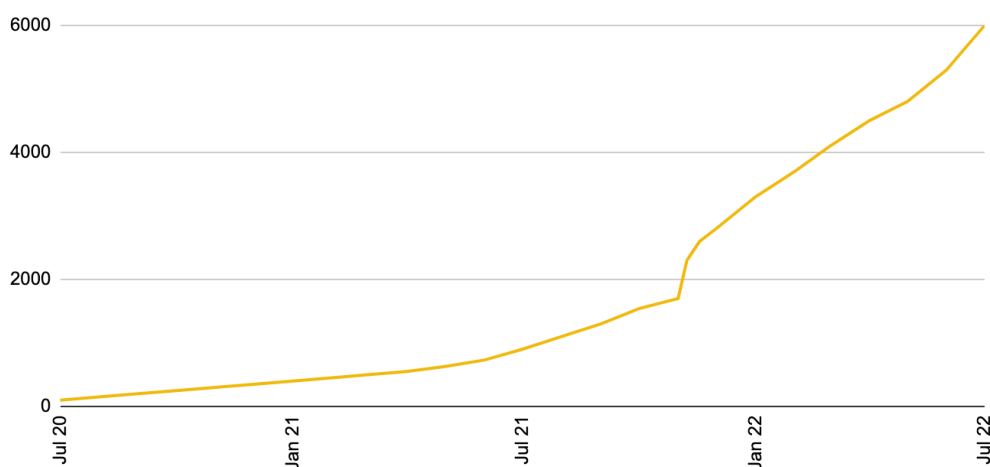
Considering decentralization, it is vital to understand how much voting power is held by the team versus how much is held by the market. Projects that concentrate too much power in the hands of a team create an unfavorable environment despite adopting a DAO model.

Oftentimes we see a gradual approach to decentralization with governance power being distributed out as community rewards are distributed.

“Oftentimes we see a gradual approach to decentralization with governance power being distributed out as community rewards are distributed”

Having a closer look, we can observe that most projects are run in a similar way. **As of now, most crypto projects choose to be organized in the form of a DAO (Figure 10), which comes with its own benefits and risks.** The majority of these projects choose not only a DAO structure but also a **“one coin, one vote” system, which can, in extreme cases, lead to plutocracy and low participation rates.** A second model that became more popular in the last year is the vote escrow (“ve”) model, which allows for higher voting power for locked tokens. The aim of ve models is to empower long-term holders.

Figure 10: Total number of DAOs - The total number of DAOs has continued to increase



Source: Snapshot, Electric Capital (@n4motto)

Both these approaches (one coin, one vote, and ve), generally speaking, help to coordinate communities, allowing for flexible and adaptive behavior compared to traditional organizational structures. However, most governance models (so far) perform poorly when it

comes to giving back value to token holders. For example, thinking about participation in a project, you are not rewarded more for a good decision compared to a bad one.

“The ‘one coin, one vote’ systems can, in extreme cases, lead to plutocracy and low participation rates”

A token native to a project can foster value alignment. “Skin in the game”⁽⁹⁾, a concept first introduced by Vitalik Buterin, aims to connect the long-term success of a project to the votes that lead to it. The concept, first established in 2020, introduced a mechanism that holds individual contributors in a decision individually accountable for their contributions. In essence, those who contribute to a good decision should get rewarded, while those who contribute to a bad idea should experience a more significant negative impact than those that did not contribute to the decision. While this is an exciting concept, we have not seen massive adoption as of now.

DAO Structures

As mentioned above, a common way to organize governance is through DAOs. DAOs are blockchain-based structures that enable the coordination of people and resources through a formalized, transparent, and binding set of rules deployed on a public blockchain in a decentralized way⁽¹⁰⁾.

Compared to more traditional LLC structures, it is easier for a DAO to take on responsibility and create innovation. However, DAOs have to balance between decentralization and efficiency constantly. DAOs today are trying to solve some tough problems and reinvent the way we have been used to organizing companies since the start of the industrial revolution. As of now, DAOs are still in their infancy and have found a way to balance speed, efficiency, transparency, and decentralization.

Nowadays, DAOs represent the backbone of the crypto industry as many - if not most - crypto companies are organized as decentralized autonomous organizations. There are a lot of exciting use cases for DAOs that go beyond the “classic” organizational structure. Futarchy, a concept in which elected officials define measures of national wellbeing, and prediction markets are used to determine which policies will have the most positive effect, could be an interesting concept for the future. A meta-governance DAO that participates in multiple protocols could be another.

Utility

The idea of utility is what gives a token organic demand, which in turn drives increased value and liquidity in a market. **When considering the demand side, an element of utility might be the most crucial element.** After all, demands refer to how many users want to buy a token, and the utility of projects can drive precisely this. For example, by offering solutions to problems, having a loyal and engaging community, and other innovative features, a project might see an increase in its demand.

Broadly speaking, almost every kind of value can be managed through a dedicated virtual token. Parameters such as features and monetary policy are defined by a DAO, organization, or individual. **Trust plays an essential role in the utility of tokens.** When tokens represent the right to access a service or participate in a vote within a regulated ecosystem, the token holder grants trust to the token issuer. Additionally, in the case of tokens representing a right, trust lies within the enforceability of this right. Following this line of thinking, it is almost always possible to bring back the source of value of a token to the concept of trust. **Ultimately, it is possible to define tokens as quantifiable representations of decentralized and disintermediated trust.**⁽¹¹⁾

“When considering the demand side, an element of utility might be the most crucial element”

To understand the concept of trust better, think back to when Terraform Labs’ stablecoin UST first de-pegged. The loss of trust led to a further acceleration of the de-pegging, and trust was never fully restored. We can observe the same fate for other projects, such as Wonderland (TIME), which saw its value decrease after the trust in the project was destroyed after the criminal background of the CFO came to light. SushiSwap saw a decrease in the token value after people lost trust in the management following internal disputes and many other protocols have similarly lost trust temporarily or sometimes even permanently after being rekt.

Trust itself doesn’t bring utility to a token, though. **The utility comes from a token fulfilling one of multiple purposes.** Right now, the key roles that tokens play within the crypto space encompass: Right, Value Exchange, a Toll (or Fee), a Function, Currency, or a means of Earnings. We will look at each of these aspects in more detail below.

Let us begin with an example: Within the Decentralized Finance (“DeFi”) space, the utility of a project can consist of offering a service such as lending, yield farming, or offering derivative products, among many other services. In return, users’ activities lead to fees that are

accumulated by the DAO controlling the protocol. Looking closer at the utility token, we can see multiple layers of utility that can apply here.

Figure 11: Token Utility - A token can have multiple purposes that bring utility to the token

Role	Purpose	Features
Right	Engagement	Product usage, Governance, Voting, Contribution, Product Access, Ownership
Value Exchange	Economy Creation	Work rewards, Buying, Selling, Spending, Active/Passive work, Creating a product
Toll	Skin in the Game	Running smart contracts, Security deposit, Usage fees
Function	Enriching Experience	Joining a network, Connecting with users, Incentive for users
Currency	Frictionless Transaction	Payment unit, Transaction unit, Store of value
Earnings	Distributing benefits	Profit sharing, Benefit sharing, Inflation benefits

Source: William Mougayar, Binance Research

As we can see from Figure 11, tokens can take various use cases, bringing utility to crypto projects. The six roles defined above each have their own purpose and features.

- ❖ **Right:** Tokens can give the right to engage with a protocol. This can come in multiple forms. Governance is the most common one, allowing for proposing changes and voting on the directionality of a project. They can further give access to a protocol and allow for product usage or offer ownership
- ❖ **Value Exchange:** The usage of tokens can lead to the creation of “mini” economies. Within this, tokens can facilitate the creation and the existence of economies by allowing for buying and selling as well as rewards for work and commitment
- ❖ **Toll:** Tokens lead to participants, investors, and users having skin in the game. Oftentimes, security deposits or usage fees can help to create a barrier to entry when running a smart contract platform or protocol

- ❖ **Function:** Tokens can frequently enrich a user experience by allowing them to join a network, participate in a game, connect with users and other participants, and can even incentivize them to participate
- ❖ **Currency:** Be it with a game or a DeFi protocol - oftentimes, a token can function as a form of currency by being a store of value and a medium of exchange
- ❖ **Earnings:** Protocols share their earnings through token incentives and distribute benefits to participants of a protocol. This can help to foster the growth and development of an ecosystem

As seen above, **tokens can offer multiple benefits and bring different types of utility to a protocol.** Creating and maintaining trust is essential. As such, tokens offer multiple layers of utility, enriching the user experience while allowing for the independence of a project. In other words, **tokenization represents a form of digitalization of value and, just like the Internet enabled free and fast circulation of digitized information, the blockchain allows the free and borderless flow of digitized value.**

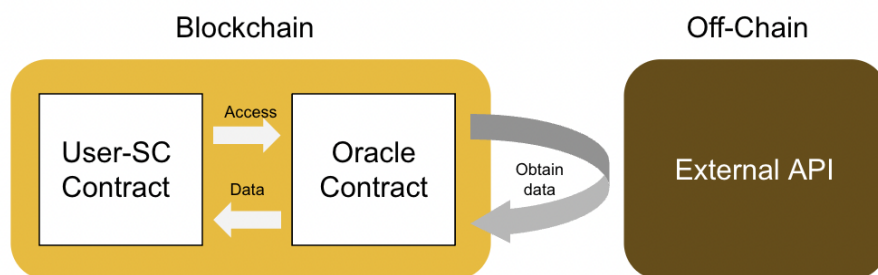
Yields Rewards

Utility needs to tie to the core business model, and rewards can be used to encourage core behaviors and nudge the participants of a protocol. We will look at ChainLink and LooksRare in detail to understand the different rewards angles a bit better.

❖ ChainLink

Chainlink ([LINK](#)) is a platform that aims to build a decentralized oracle network. Chainlink aims to provide tamper-proof inputs and outputs of data for smart contracts on any blockchain⁽¹²⁾.

The problem that Chainlink is solving is connecting the node network where smart contracts are executed with the outside world. As such, an individual can receive on-chain and off-chain data by connecting their smart contracts to various data sources and third-party APIs. One can also send data to parties outside of the blockchain they use via the Chainlink Network.

Figure 12: Chainlink Token Utility*Source: Binance Research*

LINK, the project token, is used in the Chainlink network to compensate Chainlink Node operators for retrieving data from external data sources, turning it into a blockchain readable format. Node operators offer off-chain computation and uptime guarantees. For example, if a company wants to use a smart contract together with a Chainlink node, they can do so with LINK tokens **only**. **Due to the dominant position that Chainlink has, it has leverage and bargaining power. This ultimately helps to maintain the utility of the Chainlink token.**

Chainlink recently announced that it will soon implement staking. Chainlink staking is to increase both the cryptoeconomic security and user assurances of Chainlink oracle services. Furthermore, the protocol aims to enable community participation in the Chainlink Network through staking and empower node operators to access higher-value jobs by staking.

❖ LooksRare

Recently, we have seen a rise of decentralized NFT platforms that yield a token reward. To get a better understanding, we're using LooksRare as an example. In exchange for creating a market, LooksRare charges a commission on all trades and minting. The platform is designed to benefit its community through the use of the native utility token LOOKS. **LooksRare rewards users for using the platform, allowing traders, collectors, and creators to earn the LOOKS Token.** A portion of the fees also go to the LOOKS DAO, and LOOKS governance token holders can vote directly on how to use the funds⁽¹³⁾.

Since LooksRare is rewarding users for platform usage, there have been examples of people exploiting loopholes in the system. Wash trading - a form of market manipulation in which an investor simultaneously sells and buys the same instrument to create misleading, artificial activity in the marketplace - has become an issue for LooksRare.

Data platform CryptoSlam found that approximately 95% of activity on the LooksRare stems from wash trading.⁽¹⁴⁾ While LooksRare considered wash trading⁽¹⁵⁾, the platform believed that

the cost of trading from platform fees and royalty fees would be too high to create any incentives for wash trading. Interestingly, reality shows the opposite. A large portion of the rewards goes to a small number of wash traders. This does not precisely follow LooksRare's philosophy of "By NFT people, for NFT people" and indicates that further development, as well as trial and error, is needed to create an environment of sustainable yield rewards. What is essential to consider is that trading rewards actually decrease over time and are partially used to bootstrap the protocol. As of now, while the idea is good, the user experience might be negatively affected if yield rewards can be exploited over a longer period of time.

The total rewards acquired are calculated by comparing each user's staked LOOKS at each block to the total quantity of LOOKS staked at each block during the 6,500 block period. They are calculated according to each user's trade volume in eligible collections as a proportion of the total platform transaction volume for qualifying collections.

As a community-first project, 100% of the revenue generated is distributed to stakers of LOOKS tokens. The team does not gain revenue directly from the project and is rewarded only if the project does well.

Interest Alignment

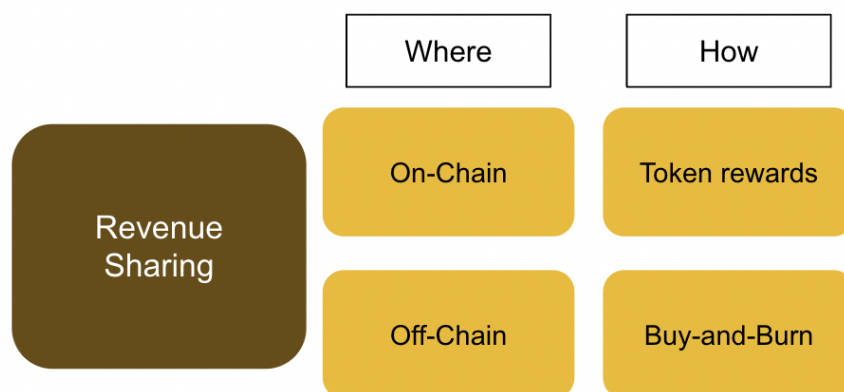
One aspect that becomes important when thinking about creating demand for a token is interest alignment between a protocol and its users. **With the right token allocation and distribution, participation and growth in a project can be encouraged.** The aim is to create a sustainable ecosystem with high levels of activity. Aligning interest with users and the protocol can lead to exactly this. Two approaches to consider here are revenue sharing and a vote escrow model.

Revenue Sharing

Revenue sharing, as the name suggests, refers to a token owner having the right to a portion of revenues or fees generated by a project. Revenue sharing can take place on- and off-chain. On-chain, when a network performs an action, a small fee is extracted and distributed to token holders.

Revenues can be distributed in several ways. Revenues can be distributed on-chain periodically through tokens rewards or through a buy-and-burn mechanism in which fees generated are used to remove tokens from the circulating supply, thus increasing the value of the outstanding tokens.

Figure 13: Revenue sharing classification



Source: Binance Research

In practice, revenue flow can differ amongst protocols, depending on the distribution design. To understand the revenue sharing model better, let us compare projects that use it with those that do not. One such comparison can be made between Uniswap (which at the time of writing is not using a revenue-sharing model) and SushiSwap - both are [Decentralized Exchanges \(DEXes\)](#).

Figure 14: Uniswap vs SushiSwap

DEX	Trading Volume*	Revenues (Fees)**
Uniswap	\$501,000,275.16	US\$ 1,650,140.71
SushiSwap	\$100,395,995.91	US\$ 163,357.46

*24h Trading Volume, **7 Day Average Fees as of 28 July 2022

Source: CoinMarketCap, cryptofees.info

Uniswap is an example of a protocol with no revenue sharing. Instead, all the trading fees accrue towards the liquidity providers. **UNI token holders do not receive revenues. Instead, the token's main value comes through the ability to participate in the project's governance.**

SushiSwap, on the other hand, is an example of a protocol that participates in revenue sharing. Liquidity providers ("LP"), token holders, traders, and the DAO are the parties considered. There is no set distribution structure with regards to how to divide the percentage that each group should receive. Different projects have different approaches to this. Of course, **redirecting a bigger share of the revenue towards one of the parties has a negative impact on some of the other parties involved in the protocol.**

Figure 15: DEX Fee distribution - Showing different approaches being used by DEXs

DEX	% fees to LP	% fees to token holder	% fees to DAO
Uniswap	100%	-	-
SushiSwap	83.3%	16.7%	-
PancakeSwap	68%	20%	12%
Curve	50%	50%	-
Balancer	50%	37.5%	12.5%
dYdX	-	-	100%

Source: intotheblock, as of 31 Jan 2021, Balancer

Revenue share tokens reward investors instantly. The payments to those who financed the business are mandated by the smart contract, which is itself immutably recorded on the blockchain.

Vote Escrow

Vote escrow (also referred to as “ve”) incentivizes liquidity providers to become long-term stakeholders. This is accomplished by granting increased rewards and governance powers to those who lock the underlying token.

Before the rise of veTokens, we lived in a world where a lot of protocols reward all token holders equally, independent of the value they add to the project and their long-term commitment. As such, the vote escrow model rewards additive and long-term-oriented participants. To understand Vote escrow better, let us look at Curve, an early adopter of this model.

“Before the rise of veTokens, we lived in a world where a lot of protocols reward all token holders equally”

❖ Curve

Curve, whose unique feature is the low slippage in swapping, is a decentralized exchange (“DEX”) for stablecoins. [CRV](#) is the native token of the project, gaining utility by allowing it to participate in the governance of the protocol. Participants have the ability to lock their CRV token to receive veCRV and participate in the governance of the protocol. Part of this governance participation is the decision on how rewards should be allocated. **A key demand driver for CRV is the number of people who want to participate in governance**⁽¹⁶⁾.

There are a few aspects that make Curve unique:

- ❖ First, the longer you lock, the more vote-escrowed CRV (veCRV) you get.
- ❖ Second, locking is irreversible, and tokens are not transferrable.
- ❖ Third, CRV lockers earn part of the protocol revenue.

One utility aspect that the vote-escrow model brings to Curve tokens is to increase TVL without overinflating the circulating CRV supply. This effectively helps to buy time to grow the protocol, adoption, and revenue.

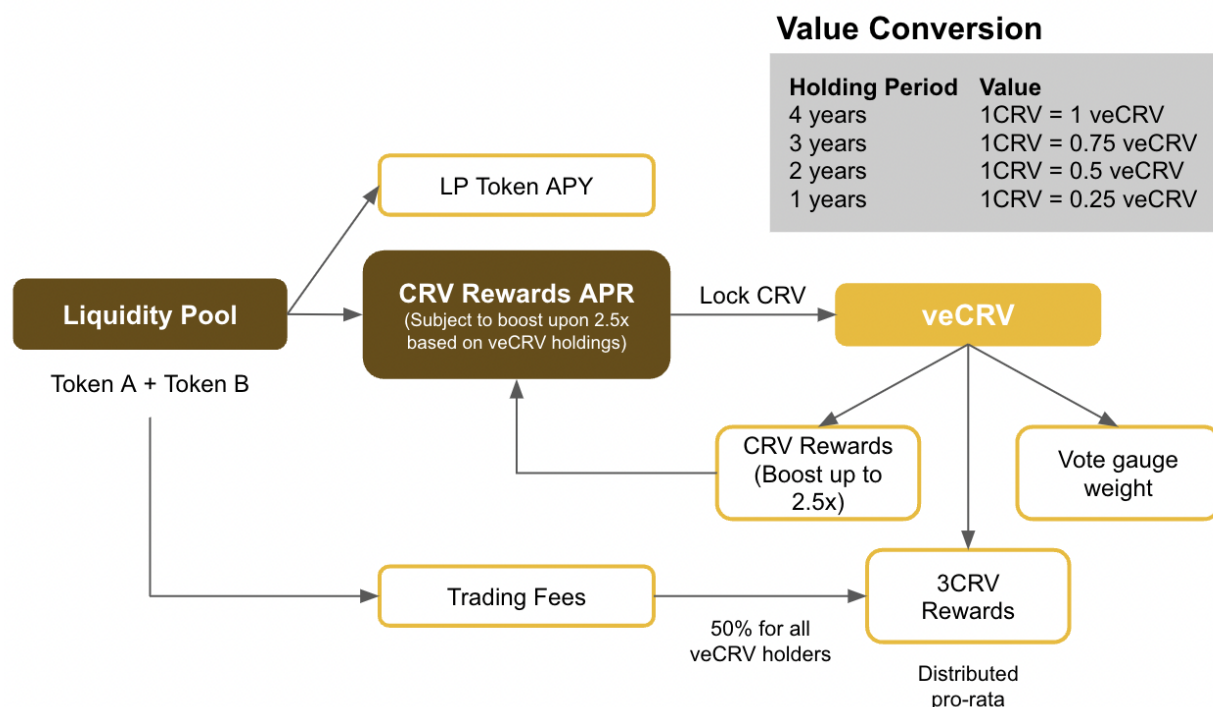
Figure 16: Uniswap vs. Curve vs. SushiSwap

Status	Governance	Utility (yield rewards)	Revenue share
Native	UNI		
Staked	xSUSHI	xSUSHI	xSUSHI
Locked	veCRV	veCRV	veCRV

Source: Binance Research

The ve-escrow model used for CRV holders lets stakeholders lock up their tokens for up to 4 years. **The longer users lock up their token, the more veCRV they receive.** In addition to that, more veCRV will also give you more influence over emissions. veCRV holders receive a prorated share of fees generated by Curve.

Due to the long vesting period, instead of farming and dumping tokens, veTokenomics offered a new way to have skin in the game. While the focus on long-term holding has been something many protocols tried to achieve and copy, we have seen many variations of the original veTokenomics model - this can vary from early unlocks with a penalty to different approaches to vote gauge mechanisms.

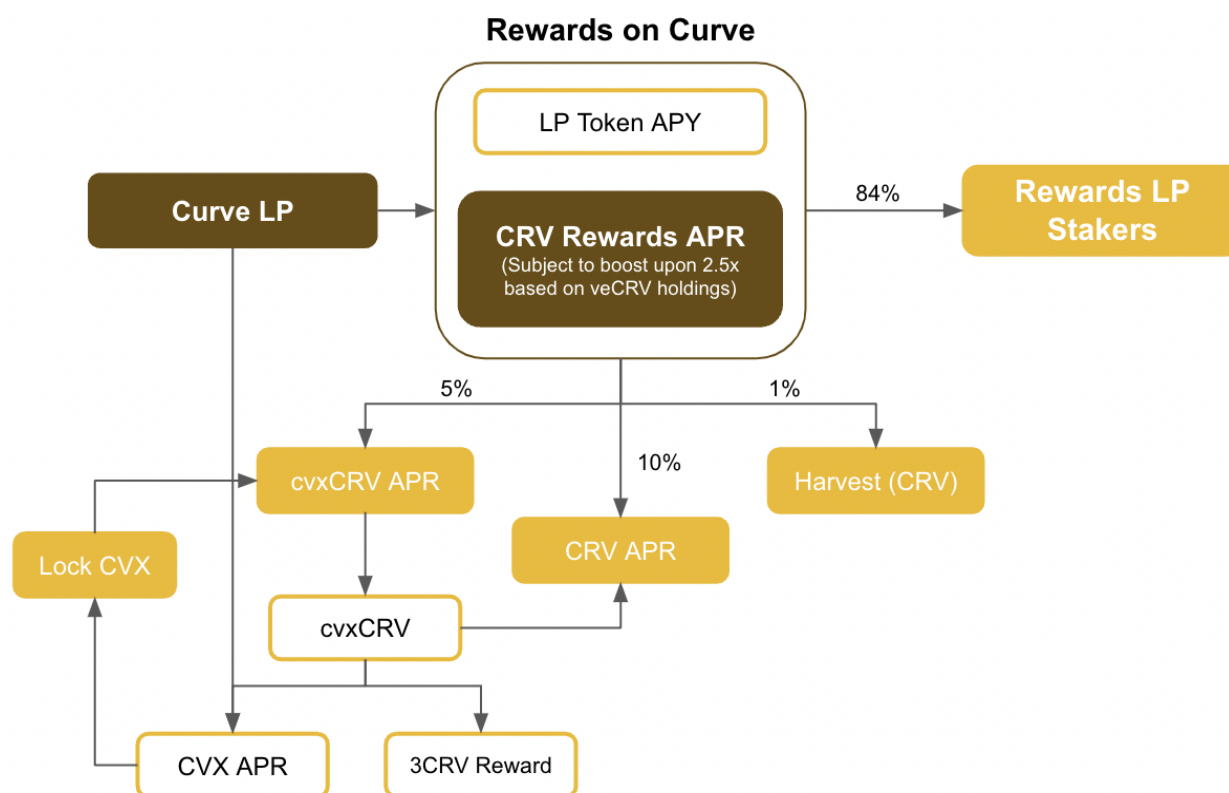
Figure 17: Curve Model (without Convex)

Source: Binance Research, Curve

❖ Convex

While veCRV provides a lot of utility, driving demand for the token, it also has a strong drawback - illiquidity. **In response to the liquidity problem that comes with locked CRV tokens, Convex developed a non-redeemable, liquid staking derivate of veCRV (cvxCRV).** The reason is relatively straightforward - right now, there are not many options for CRV holders to remain liquid because fees and tokens accrue to veCRV. cvxCRV fills this gap, allowing users to lock CRV with Convex while maintaining liquidity. cvxCRV generates fees from underlying veCRV, fees on the Convex platform itself, and from [CVX](#) emissions⁽¹⁷⁾.

Figure 18: Curve Model (with Convex)



Source: Binance Research, Curve, Convex

As we can see in Figure 18, **Convex is benefiting by receiving a boost, governance, and gauge weight that in returns goes to the platform and CVX holders.** Due to its apparent benefits, Convex's dominance has shifted investment attention from CRV to CVX.

Convex...

- ❖ Allows liquidity providers to receive boosted yields for a small fee.
- ❖ Offers cvxCRV and liquid veCRV tokens whose revenue likely exceeds that of vanilla locking.
- ❖ Offers CVX, a token that gives users governance rights and platform fees

Although there is a level of power struggle, **Curve and Convex maintain a mutually beneficial relationship in theory**. As the sole dictator of Curve's rewards emissions, **Convex amplifies Curve's effectiveness via its economic model, which naturally brings more users to Curve and ultimately to Convex in a symbiotic way**. Due to the strong growth in Convex, the protocol now controls more than 50% of governance power, which we see as a negative. As Curve grows, so does Convex.

❖ **Votium**

Due to the transparent weight gauge voting and bribing system, veToken holders are incentivized to participate in the governance. This is where **Votium** comes in. **Votium, an incentives platform, allows vICVX and veCRV holders to receive compensation from buyers interested in amassing deep liquidity through emission rewards⁽¹⁸⁾**. The platform allows protocols to buy CRV emissions through Convex's governance system. Buyers can set the amount they are willing to pay in total for users to vote for their pool. This is what led to the initial Curve Wars with protocols competing for CRV emissions.

The growth of **Votium makes it clear that Convex governance has eclipsed Curve governance in a struggle that goes beyond monetary gains to include literal power and influence.** As more protocols migrate to veTokenomics, we expect liquidity to become a commodity in high demand.

*“The growth of **Votium** makes it clear that Convex governance has eclipsed Curve governance in a struggle that goes beyond monetary gains to include literal power and influence”*

❖ **veTokens Drawdowns**

While veTokens help to incentivize long-term holdings, there are also some drawdowns to this model that we should be aware of. **Long-term lock-ups make it harder for institutions and investors to participate, effectively reducing the governance base for the protocol.** While those that remain will likely be long-term oriented, the overall decrease in participation is still a drawdown.

It is crucial to keep in mind that veTokenomics are not the perfect solution for every project. Many projects suffered from high inflationary pressure and underperformed compared to ETH and CRV. **Since people realized that a one-size-fits-all approach does not work all the time, we have seen development in the space that we expect to continue.** For example, Ribbon Finance allows early unlocking of veRBN with a penalty.

Beyond Supply and Demand

When looking closer at tokenomics, we can see how the space grew beyond supply and demand considerations in the past years. Design aspects and token sustainability became more important. After seeing projects with good tokenomics fail, and some with less-optimal tokenomics succeed, we can note that **the overall competitive strength of the underlying product has gained more and more importance**. A bear market is not only a stress test for projects with bad tokenomics but also for those with a lousy product and weak fundamentals.

Considering design aspects, more and more projects started to explore a multi-token approach to overcome some of the issues of a single-token model. Over the next pages, we will explore all these aspects that go beyond the supply and demand of tokenomics and create an understanding of two-token design, and further reality-check tokenomics.

Two-token Model

To facilitate token economics, a two- and three-token model can be used to separate the functionality of tokens. To visualize this model, we will first discuss the underlying idea and use Axie Infinity as a short case study.

A two-token model provides two different tokens at the same time. **This, in return, helps to specialize the use cases for each of the two tokens by separating the “ecosystem” from a purpose-solving token.**

In most cases of two-token models, we have a **Utility Token** and a **Governance token**. The utility token offers utility across most of the network to perform a specified task (e.g. to allow for in-game transactions). The other, the governance token helps to decide on the directionality of a project.

❖ Governance Token

Governance tokens help to manage a protocol without impacting the price of the utility token. This becomes important when we consider use cases of a two-token model within games (amongst others) where the game design would be negatively impacted if a single token model is used. If you want to make an in-game transaction (e.g. buy a collection item) but only have one token that is also used for governance, the game design might be negatively impacted due to speculation and price fluctuations. In extreme cases this could lead to some gamers being

excluded. As such, the main “task” of a governance token is to help separate the management of a decentralized project from the remaining aspects that should be considered.

❖ Utility Token

This token is used only within the platform, network, or game. With this token, investors cannot raise funds as it is used to serve specific purposes based on the platform’s architecture. Utility tokens could enable specific actions or provide specific rights within a platform or GameFi project. The best way to think about utility tokens is to imagine them as in-game currency, where you wouldn’t want to see large price fluctuations to exclude a huge majority of gamers and have an infinite supply to be able to scale the game without negative impacts from scarcity.

Figure 19: Pros and cons of a two-token model

Pros	Cons
Separation of use-cases	Token utility less concentrated
Unlimited supply of utility token	Unintentional correlation
No dilution to the governance token	Complexity

Source: Binance Research

Evaluating the pros and cons, we believe that **less dilution of the governance token is a key advantage**. Conceptually, when a reward is given in a second token, we won’t have a diluting effect on the first token. Furthermore, a separated utility token can allow for unlimited emission forever, which - especially for games - is a key aspect to consider. As such, a second token and a separation between governance and utility tokens can help to provide control over the inflation of the utility token. This, in return, is important since you want to be able to maintain a growing economy without leading to high barriers to entry due to high token prices. In addition, restrictions to having a fixed supply can be favored by investors since they are considering the price performance of a token. As such, separation of use cases might help to tailor a token to the right audience.

Despite the benefits that a two-token model can bring, we also have to note some negatives. Use cases of a token are separated - which can lead to unnecessary complexity. Furthermore,

this complexity can lead to wrong expectations. So far, some investors have expectations of tokens being somewhat correlated where it shouldn't be the case, which can be seen when looking at the price movements of projects with two-token models such as Axie Infinity (Figure 20).

Figure 20: Correlation matrix showing a positive correlation between SLP and AXS, a two-token model

	AXS	SLP
AXS	-	0.47
SLP	0.47	-

Source: cryptowat.ch

*Correlation: Positively correlated variables tend to move together

**Measured with first-differencing

We believe that to overcome this, there could be an exploration of how a utility token should look like. The usage of stablecoins instead of a project-owned utility token might help to separate the price expectations of tokens. However, considering the stablecoin mechanism, risk and liquidity are important considerations to make.

❖ Axie Infinity

To understand how dual-token can work and why this model exists, we should look at how Axie rolled out SLP. The [SLP token](#), which stands for Small Love Potion, acts as the utility token. It allows players to complete in-game activities. Using SLP, they can purchase or breed Axies, the in-game pets⁽¹⁹⁾. The SLP token's overall value is uncapped, and the rotational supply is continually changing. This is due to the fact that SLP tokens are always created by in-game actions and then burnt whenever new Axies are generated through the breeding process.

[AXS](#) is the governance token with a capped supply of 27 million. It provides both players and investors with the ability to buy or trade the tokens on crypto exchange platforms. The AXS token also allows holders to participate in in-game governance. Holders can stake the tokens on the platform, which yields them passive rewards.

Believe it or not, Axie actually started as a single-token GameFi project. Only throughout its existence did Axie Infinity turn into a two-token project, decentralizing the project through the introduction of a governance token. **AXS is currently used for governance and staking**

rewards of the projects, while SLP is fulfilling in-game utility, helping to breed new Axies and earn more SLP.

“At the current state, Axie uses a two-token model. One token for governance - providing voting power - and another token for in-game functions”

At the current state, Axie uses a two-token model. One token for governance - providing voting power - and another token for in-game functions. Following Axie Infinity, many other GameFi projects adopted a similar approach to a dual-token model.

As of now, we are still in the exploration phase, with different approaches to one-, two-, and three-token models. Depending on the use cases, each model offers some advantages and disadvantages. For gaming projects, we see the advantages outweigh the disadvantages when it comes to a two-token model. The separation between governance and utility tokens comes with clear benefits that are important for games - such as inflation control and incentive through fixed supply for investors. There are areas that we believe can be explored further, such as the design of a governance and utility token in isolation from the other.

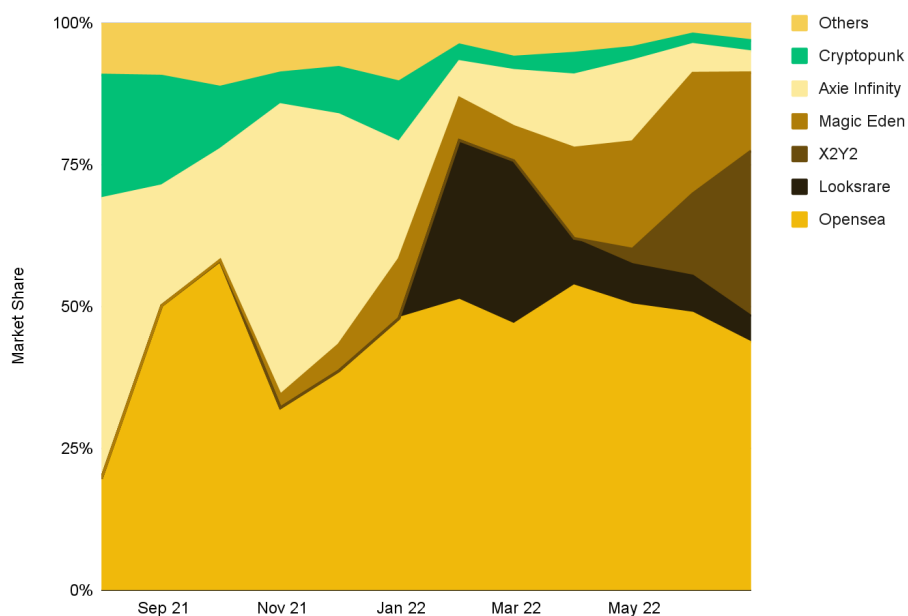
Product vs. Token

Not all projects have a token, and not all need a token. Some projects have a good token design that is not working out in reality. Let's spend some time uncovering the dynamics between product, design, and token in a bit more detail.

Product is key. Always. If a project raises funds through an ICO and offers an attractive token design, then this is definitely a plus. On the contrary, having a good token design but a bad product will ultimately remove demand and lead to a downward spiral. **In the long-run, good projects with strong fundamentals will always win over those with bad fundamentals.**

OpenSea is an example of a project with a good design, strong competitive advantage, and no token. As one of the first established NFT trading venues on Ethereum, OpenSea's competitive advantage has been its first-mover advantage and strong adoption. OpenSea supports over a dozen crypto wallets, with MetaMask and Coinbase Wallet the most popular. While decentralization is a central tenet of the crypto space, OpenSea can look a lot like a Web2 company operating in the Web3 space. Rather than distributing its fees back to users or giving users the option to vote on business decisions, as some marketplaces do, OpenSea operates like a typical tech company.

Figure 21: Market share of NFT marketplaces shows that OpenSea is still the dominant leader



Source: Footprint Analytics (@bond), Binance Research

Despite the strong competitive advantage of OpenSea, we have seen this year that token design should not be ignored. LooksRare (mentioned above) is an example of this. The NFT exchange started a vampire attack on OpenSea, showing us again how projects can use token incentives to grab significant market share from a market leader in a short period of time (Figure 21). During the launch of LooksRare, 12% of the total token supply was airdropped to OpenSea traders, luring them to try LooksRare and move from OpenSea to their platform (in the early days volume on LooksRare surpassed that of OpenSea). LooksRare's airdrop is an example of a tokenomics design that focused on grabbing market share from the leader in a short period of time. Despite early success it remains to be seen how sustainable such an approach can be. Development in market share suggests that it might not be sustainable.

We have many more such examples. Uniswap's token [UNI](#) has fewer use cases compared to its competitors (SushiSwap, PancakeSwap, Curve, etc.). Although there are fewer use cases for UNI, it still has a higher trading volume compared to other protocols. The reason here is similar, with Uniswap being one of the first DEXs on the Ethereum blockchain, which allowed the protocol to gain a competitive advantage. Additionally, Uniswap Protocol v3 has deep liquidity in the key pairs (ETH/USD, ETH/BTC, and other ETH pairs). This capital efficiency for liquidity providers is adding another layer of competitive advantage to the protocol. With this deep liquidity and the ability of risk aggregation, Uniswap can offer a competitive platform independent of its UNI token. UNI mainly fulfills a governance function at the time of writing, though considering the size and impact of Uniswap pairs, it is easy to understand why governance becomes an important aspect. There can, of course, be many aspects that contribute to the high trading volume of UNI tokens - the hope of future revenue distribution can be one of those.

Design meets Reality

A good token design is essential. However, even the best token design does not guarantee the success of projects. To understand this better, let's look at OlympusDAO to see how good token design is not working out in reality.

❖ OlympusDAO

OlympusDAO introduced a so-called "rebase" mechanism that would issue OHM tokens every eight hours to those that decided to stake their OHM tokens (sOHM). Of course, the underlying assumption is that the treasury would be able to support this.

There are multiple aspects that differentiate sOHM from veCRV. One is that sOHM could actually be unlocked at any point in time. All one had to do was forfeit a single re-base worth of rewards. As such, the staking is predominantly adding an interest rate to OHM. In late 2021 this “interest” went as far as offering over 8000% annual percentage yield (“APY”), with some spin-offs promoting even higher APYs. While OlympusDAO was gaining more and more prominence in 2021 and surpassed US\$5B in market capitalization, the project token has been in free fall ever since. **We would like to argue that insufficient value alignment and utility** (two important elements to create and sustain demand) **led to this**. Before understanding why OlympusDAO’s token design did not survive the reality check, let us first understand the project tokenomics in more detail.

OlympusDAO has introduced game theory into their tokenomics. The paradigm is a game between players that have three different actions available to them. Stake, bond, or sell. People stake OHM when they anticipate an expansion in supply or price. They sell when they expect supply or price to drop. And they bond when they do not have a solid directional bias either way.

Selling is considered a net-negative within this game model (adding downward pressure to the OHM price). Bonding is considered neutral in that it provides assets for the Olympus treasury, but it doesn’t generate buying pressure that increases the value of OHM.

Staking, on the other hand, is considered to be the most beneficial action, creating a win-win scenario. It helps to increase the value of OHM by causing positive buy pressure from the initial purchase of tokens, and it furthermore increases OHM scarcity by locking up more of the supply.

Figure 22: OlympusDAO Game Theory - Staking is net positive creating a win-win scenario

	Stake	Bond	Sell
Stake	(3,3)	(1,3)	(-1,1)
Bond	(3,1)	(1,1)	(-1,1)
Sell	(1,-1)	(1,-1)	(-3,-3)

Source: Binance Research, OlympusDAO

While the game theory would suggest that everyone stakes their token, this was not the case in reality, and participants still opted to sell their tokens. We believe one reason is that **the staking mechanism was insufficiently focused on value alignment and utility**. There is justification for moderate rewards for providing liquidity and marketing. However, in the case of Olympus, the high APY led to an adequate value transfer from non-stakers to stakers without actually leading to value alignment. The high APY was unlikely to stimulate any real, value-providing use cases and instead weakened the long-term foundations of the protocol. As such, the protocol's tokenomics, while promising in design, prioritized value transfer over value creation, a design we believe to be long-term unsustainable.

Conclusion

When looking closer at tokenomics, it becomes clear that both supply and demand play a crucial role in creating a sustainable token economy.

A good design of token supply is important to create an environment in which allocation and emission are managed in a sustainable way - fostering long-term growth rather than short-term gains. Too often, we see how bad token design impacts the sustainability of a project because wrong incentives have been given or exploits have been made too easy. Creating a good token supply side is not easy since there are multiple factors to consider, and we do not have a one-size-fits-all model.

The demand side of the supply/demand equation is equally important if not more important than the supply side. However, when thinking about tokenomics, supply design is what most people think about first. When creating a sustainable tokenomics model with strong fundamentals, it is important to remember that without token demand, supply itself would be of no value. Despite many important aspects of how to design a token supply, there has to be a need to hold a token. **Without a good product, even an excellent token design and utility are of little value.**

Closing Thoughts

We see interesting developments in the space and believe that an increased focus on long-term sustainability will be beneficial. Overall project utility will likely become more important, as we believe that - in the long-run - good projects with strong fundamentals win over those with bad fundamentals.

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