SmartMoney/Enigma Research Note

July 27, 2021

Bancor ($BNT)

- TYPE: DEX
- CHAIN(S): ETH, chain-agnostic
- TVL: $1.25B
- MARKET CAP: $758M
- CONTRACT ADDRESS:
- 0x1F573D6Fb3F13d689FF844B4cE37794d79a7FF1C

Product Overview/Summary

Bancor was founded in 2016 with the goal of creating an automated market maker (AMM) to replace the order book model found in traditional equity markets. Unlike a traditional market maker model where a centralized entity seeds liquidity for a given market at a predetermined range of prices and matches bids and asks in exchange for a spread, an AMM prices according to a bonding curve determined by the equation x*y=k and allows anyone to provide liquidity to any token pair for a share of trading fees in a permissionless fashion.

Despite being the innovator here, Bancor's model was copied by rival Uniswap who made the decision of replacing Bancor's $BNT token with $ETH as the common token on all pairs. Since a user had to supply an equal balance of both tokens in the pool and ETH was a much more commonly held asset, this tweak allowed Uniswap to bootstrap liquidity to become the top DEX (decentralized exchange) within DeFi. In the fall of 2020, Bancor released v2.1 which allows liquidity providers for the first time to provide single-token liquidity and with full protection from impermanent loss. The protocol saw volumes skyrocket as these features unlocked a differentiated product experience for investors seeking passive income. In this research note, I explain why I believe Bancor is the most overlooked DEX in DeFi.

Product/Token Model

Elastic Supply

While its token was arguably superfluous in its original model and hampered early growth, an upgrade in the fall (Bancor V2.1) showed that $BNT as the common pair uniquely enabled features that other AMMs using ETH as a common paired asset could not.

The core feature of the Bancor v2.1 model is its elastic supply, or its ability to mint and burn $BNT tokens at will, making Bancor's tokenomics a key aspect of its product. The elastic supply model enables the two most important new features of the Bancor model, single sided liquidity and impermanent loss protection - basically fancy words for single token staking and deposit insurance. Unlike other AMMs that force you to take

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on involuntary token exposure by seeding a pool with equal parts $ETH and the paired token for that particular pool, Bancor allows you to stake either the $BNT side or the risk asset side, which we will refer to as TKN going forward. In addition, the protocol is able to mint tokens to compensate for the exact amount of pool leakage at withdrawal as a result of arbitrageurs exploiting temporary discrepancies in prices between exchanges.

Single-Side Token Staking

Despite this innovation, there is still an initial liquidity chicken and egg issue to solve. $BNT and TKN liquidity providers are unlikely to want to stake their tokens for a share of fees unless there are active traders on the pool generating swap revenue and traders are unlikely to trade until there is sufficient depth in the pool to reduce slippage to an acceptable level. Bancor's elastic supply solves this problem by co-investing in the pools (up to a co-investment limit) by minting the $BNT side of the pool to enable the pool to accept incoming TKN deposits and bootstrap initial pool depth. The protocol then burns those placeholder tokens in addition to any swap fees accrued to that protocol minted $BNT when it is eventually replaced by organic stakers.

Take a minute to appreciate what just happened there. $BNT was minted out of thin air by software to bootstrap pool depth and match incoming TKN deposits, accrues swap fees over time like any organic $BNT staker, but when it's replaced by a new organic staker, that newly minted $BNT is burned along with any accrued fees leading to a net deflationary effect on token supply. That minted supply can only ever temporarily touch the open market, so it is erroneous to value it as a part of the total outstanding supply. However, the market is currently including this temporarily inflated supply in the public valuation on popular analytics sites leading to a distortion of Bancor's true valuation by approximately 60%.

In addition to fees generated from swaps, both TKN LPs and $BNT LPs are given liquidity mining rewards to incentivize early bootstrapping of liquidity in the network. Liquidity mining is essentially offering inflationary governance token rewards during initial protocol launch stages to incentivize early users. It would be like if Uber was created in 2021 and streamed stock to drivers instead of indirectly raising venture capital money in order to fund early rider and driver incentives.

The prevalence of liquidity mining has brought about a new issue of mercenary capital as users come in to supply capital and "farm" token rewards and then dump them on the open market putting sell pressure on the price on the native token. However, with single sided staking, rewards and swap fees (both denominated in $BNT) can be restaked back into the pool without buying more ETH to pair it with 50/50. Bancor's token model ensures not only incentivized "usage", but the right kind of usage, incentivizing a farm-to-stake model and locking up more supply which opens up further space for more TKN holders to come in. This process essentially compounds dividends for stakers and has led to 83.29% of total supply staked in the protocol. By creating a model where the native token itself is essential to the functioning of the protocol, farm-to-dump becomes farm-to-stake and the rewards incentivize specific actions that increase the utility of the network and the native token itself.

Impermanent Loss Protection

The elastic supply model also enables the provision of impermanent loss insurance, or deposit insurance. When you deposit into an AMM pool, for example the ETH / BNT pool, you are temporarily giving up custody of your assets as they become the assets traders use for swaps. As traders make swaps out of the pool, pools can leak value as arbitrageurs recognize discrepancies between prices on different exchanges and exploit that for profit. This can leave you with fewer tokens than you began with and it's possible to leave the pool with a net loss even after accounting for swap fees and liquidity mining rewards. The importance of such protection cannot be overstated as it is impossible to forecast your returns in advance without such protection. With deposit insurance, Bancor token stakers can be sure that all rewards are guaranteed passive income. Additionally, impermanent loss experienced on protocols makes it difficult to stay long on any given token without active management skills as any significant increase in value relative to the paired token will leave you worse off than just holding that token.

Of course, the natural question is whether deposit insurance is actually sustainable. Bancor counteracts this concern by structuring protection in a way that it is not exposed to large payouts. Deposit insurance is vested with a 30 day cliff after which the depositor earns 30% coverage all at once and then an additional 1% per day until day 100 when they receive full coverage. Long term staking is further incentivized with a rewards multiplier on liquidity mining rewards which starts at 1x and increases .25x peer week until the 2x multiplier has been achieved. Such a construction is essential as it allows the protocol minted $BNT that is co-invested in pools to accrue swap fees over time which can be used for impermanent loss payouts before resorting to inflationary minting.

While the inflationary IL payouts concern many investors, it's important to understand that the insurance model is similar to an insurance mutual where the risk is mutualized across all the pools. While some pools may experience impermanent loss, many others will be able to more than compensate with swap fees. Furthermore, with $BNT as the common asset on all pairs, it naturally tracks the overall market and leads to fewer cases where the risk asset significantly diverges from the price of $BNT. To date, only about 2% of supply has been paid out to cover impermanent loss payouts. In addition, impermanent loss only becomes permanent when deposits are withdrawn. With such a large percentage of outstanding supply staked, it could be likely that these payouts are rarely made if depositors are receiving attractive yields with no risk of impermanent loss. Bancor's insurance does not solve impermanent loss, but rather diversifies the risk across all pools and transfers that underwriting risk to the protocol in exchange for higher rewards for the $BNT holders who face potential dilution.

As a Bancor LP, once impermanent loss is covered, fees and rewards are pure profit - guaranteed passive income. In summary, the elastic supply creates the possibility of impermanent loss insurance and single sided liquidity and leads to a net deflationary system as long as fees accrued to protocol minted $BNT outweigh insurance payouts across all pools.

TOKENOMICS

Monetary Policy

Bancor launched with a token supply of 60 million $BNT after raising $153m in an ICO in 2017. An elastic token supply allows the protocol to mint and burn tokens at will in order to pay out impermanent loss insurance and match incoming single sided deposits with protocol minted $BNT. The protocol incurs two kinds of inflation - temporary liquidity mining rewards to incentivize new stakers as well impermanent loss payouts, which as previously mentioned, has only equaled approximately 2% of overall supply to date. Since February of 2021, the total circulating supply has dropped from approximately 140m to around 110m $BNT.

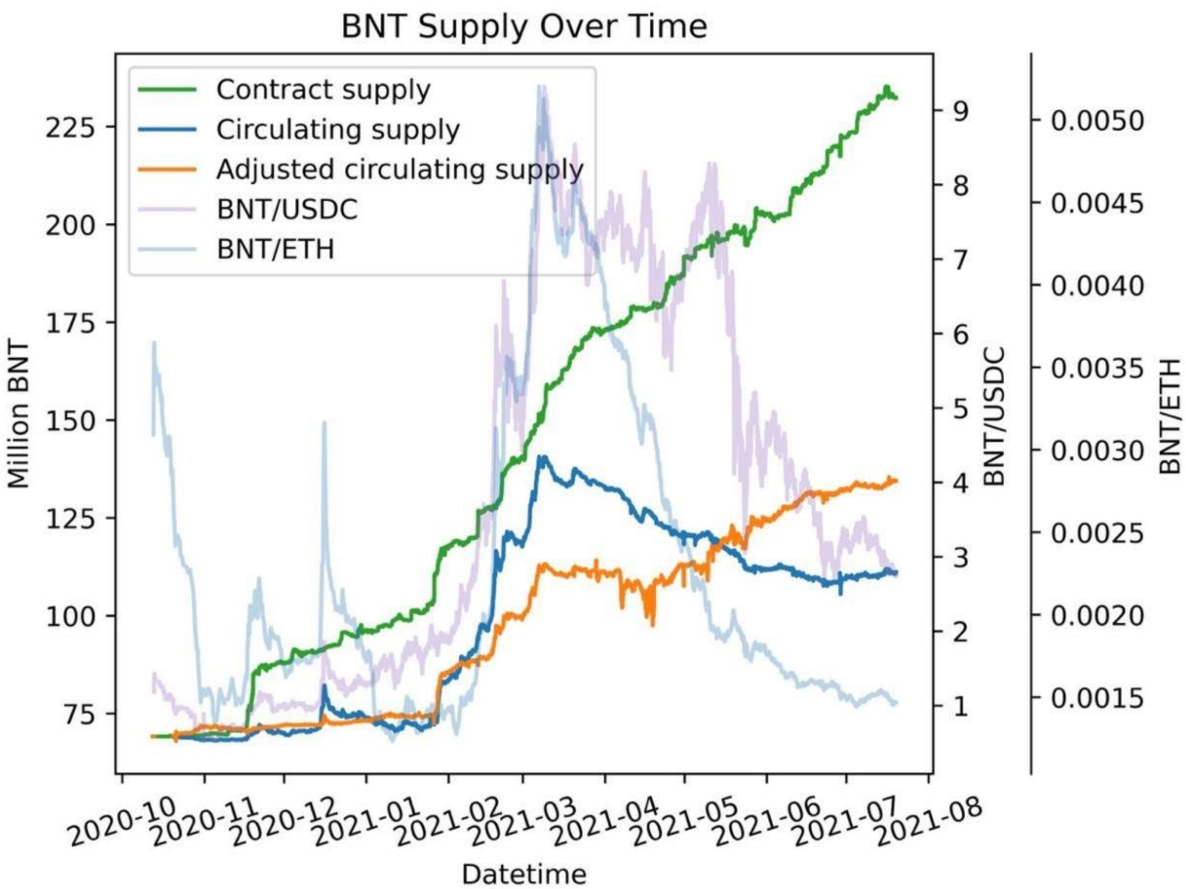
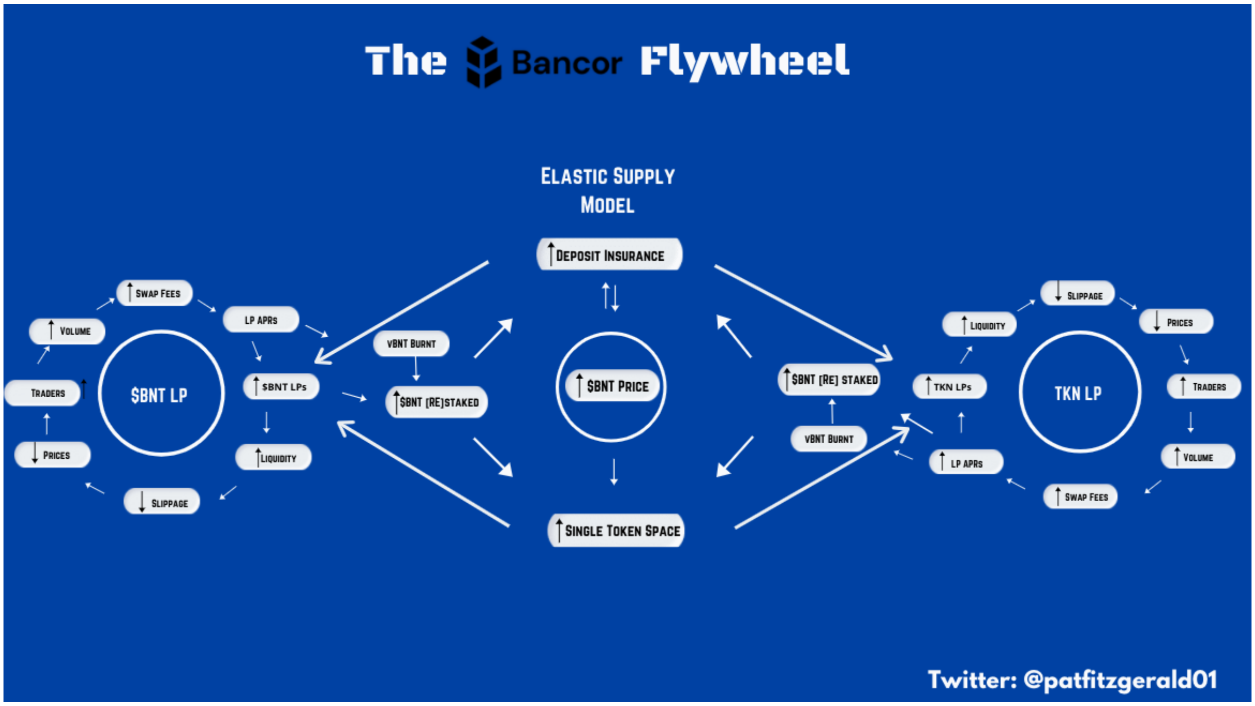


Chart and data via Bancor.

Value Accrual



Currently, the Bancor token accrues value directly from swap fees and indirectly through a small protocol wide token burn of 10% of swap fees. Previously swap fees were split 50/50 between the risk asset and $BNT sides of a given pool. However, in order to counteract any inflationary impermanent loss payouts, the protocol instituted a 5% protocol burn fee which the DAO has increased to 10 % after a recent vote. Through a combination of direct dividends and removal of supply from circulation, $BNT holders are returned 55% of the total swap fees generated by trades using Bancor pools, compared to 16.6% for $Sushi stakers and 0% for holders of the $UNI token. Given that Bancor offers a valuable token insurance product and prevents depositors from taking on unnecessary token exposure with single sided staking, we think it is likely that TKN suppliers would be willing to accept a less favorable split for the privilege of staying long on their favorite tokens while still generating some passive income, thus increasing margins for $BNT holders over time.

Competitive Landscape

Despite strong signs of product market fit, fundamental questions about the competitive structure of the DEX (decentralized exchange) space remain. In the long run, industry structure has a greater influence on profit potential than technology or overall industry growth rates. With low switching costs and a proliferation of substitute DEXes for trading, it's unclear if there is room for sustainable margins or we will instead see a race to the bottom on swap fees. As aggregators continue to pull in more volume and liquidity continues to fragment, individual DEXes with undifferentiated supply could be commoditized by aggregators that own the customer relationship. However, should the industry start to follow a power law where the winning DEXes with the best products for liquidity providers capture the lion-share of supply, the balance of power could tip away from the aggregation layer towards the liquidity or protocol layers.

Currently, Uniswap has a commanding lead with over 62% market share and about 7.7B in volume over the last 7 days. With its recent V3, liquidity providers can concentrate liquidity around certain price ranges, making the DEX more capital efficient. However, this kind of liquidity provision requires more active management, and results in higher risk of loss. This is because while Uniswap V3 gives LPs the opportunity to generate more fees within certain price bounds, concentrating liquidity exposes LPs to a significantly higher risk of impermanent loss, which can minimize yield or result in negative earnings. This model also introduces barriers for passive liquidity provision, and results in profits accumulating in the hands of the most active LPs. In terms of tokenomics, the current Uniswap protocol lends itself to the supply side capturing the majority of platform revenue given that the $UNI token has no utility in the functioning of the exchange other than governance. $UNI holders make 0% on fees, but there exists a placeholder fee switch in the code where in the future token holders could make 16.6% of swap fees compared to approximately 55% for BNT holders.

RECOMMENDATIONS

As competitors like Uniswap position themselves to serve professional market makers with increasing feature complexity, we believe Bancor has an opportunity to differentiate as the simplest way to earn guaranteed passive yield on crypto holdings regardless of position size. After pioneering the concept of an AMM, it took the protocol some time to evolve before finding product-market fit with the release of V2.1 allowing for single-side staking and impermanent loss protection. With the highly anticipated release of V3 which is said to maximize yield for passive LPs, we feel confident that Bancor has the opportunity to become a liquidity vortex for the token holdings of the next billion users onboarding into DeFi.