



The Crisis and Opportunities of the NFT Lending Avant Garde — BendDAO

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1. Key Insights

1.1 Investment Thesis

- **BendDAO's peer-to-pool lending protocol scores high on Product-Market Fit (PMF), delivering a great user experience in terms of funding efficiency, security, and simplicity of use.** BendDAO precisely serves the blue-chip PFP market, the largest share in the NFT market. As the blue-chip NFT users are quite sensitive to capital efficiency, the simplicity and straightforwardness of the product saves users from setting parameters, greatly enhancing loan speed and lowering risks.
- **The protocol becomes a great buy-the-dip place for NFT pro-traders.** BendDAO provides professional NFT traders with immediate loans that allow them to trade with leverage when Yuga Labs dropped Otherdeeds. The liquidation mechanism has also made the BendDAO auction pool a perfect buy-the-dip place for NFT Flippers, further increasing its visibility in the blue-chip NFT community.
- **The active participation of users in the governance and proactive product development work in tandem with each other to drive protocol forward.** The BendDAO team is a true practitioner of DAO governance who has always encouraged the community to participate. BendDAO raised funds via an IFO approach (Initial Fair Offering) from the public without any private funds. The \$BEND mining rewards allows users to participate in governance after obtaining veBEND by staking BEND. The tokenomics also opens up the channels for users to make suggestions for protocol development, while deepening the relationship between the protocol and users, enhancing customer loyalty.
- **The Ape Staking Pair Listing function is good for the long-term development of the protocol.** In the near future, BendApeStaking, a pair listing feature developed based on Yuga Labs Ape Staking, will be launched (launched already as this English report is published), which is expected to bring new revenue stream and user growth to BendDAO.

The competition in the NFT lending field becomes more intense, but BendDAO has been leading in most of the dimensions including the number of users, reputation and functionality. If the protocol continues to grow as the NFT market expands, BendDAO will have more momentum when the real NFT-Fi boom comes around.

Readers who are familiar with the BendDAO can skip the basic information part. Please see the “Business Analysis” part for a detailed analysis.

1.2 Major Risks

Although BendDAO is leading the NFT lending segment, we kindly remind readers and investors to watch the following risks: (1) the downturn of the Blue-chip PFP market, (2) the fierce competition landscape, (3) the limited customer base, (4) liquidation mechanism flaws, and (5) parameter risks. Users also need to be cautious about the stolen NFTs listed on BendDAO as the protocol doesn’t give users a warning.

Please see the “Project Risks” part for a detailed analysis.

1.3 Valuation

We value BendDAO by using a relative valuation model and use P/F ratio (Market Capitalization / Total Protocol Fee), P/S ratio (Market Capitalization / Protocol Revenue), P/TVL ratio and P/Loan Value ratio for valuation. We compare the ratios of BendDAO with its peers in the DeFi lending field such as Aave, Compound, and NFT lending field such as Drops and JPEG’d.

We find that BendDAO is currently undervalued, partly because the protocol is at an early stage of development, and the NFT-Fi sector has an overall low valuation. Only if NFT assets continue to expand in terms of category and value can the NFT-Fi segment, as a second layer of NFT, maintain long-term growth, and by that time, the value of BendDAO, as one of the leaders in NFT-Fi, is expected to be further discovered by the market.

Assumptions: The NFT lending in this report does not involve NFT renting and NFT fractionalization.

2. Project Information

2.1 Brief Introduction

BendDAO is a "peer-to-pool" NFT collateral lending protocol mainly serving the blue-chip NFT holders, whereby the borrower is able to quickly withdraw ETH in the protocol pool by staking blue-chip NFTs in the pool, and the depositor provides ETH to the pool to get ETH-denominated interest. Meanwhile, the borrower and the depositor get BEND mining rewards as they use the protocol. Currently, the NFTs allowed as collateral primarily include 8 blue-chip NFTs.

BendDAO is the first protocol to put forward the peer-to-pool NFT lending, a real avant-garde in the NFT space.

The protocol has been running for about 8 months since its launch in March 2022. Since then, its functions have been constantly developed and updated, whilst the BendDAO team continues to develop new features and functions according to the market needs. In addition to the lending business, BendDAO has a built-in trading marketplace to support new features such as "down payment" and "collateral listing". Also, peer-to-peer lending function and Ape Staking Pair Listing function are under development. (As of this English report is published, the Ape Staking Pair Listing function has already been launched.)

2.2 History and Roadmap

2.2.1 Major Historical Events

Timeline	Milestones & Events
Sep 2021 - Dec 2021	Prototype completed.
	Testnet launch
Mar 2022 - Apr 2022	BEND token airdrop (March 20, 2022 - June 18, 2022)
	IFO (Initial Fair-Launch Offering) (March 20, 2022 - April 24, 2022)
	1st audit report and mainnet launch (March 23, 2022)
	Uniswap V2 liquidity mining rewards proposal got passed by the DAO governance.
May 2022	The blue chip NFT collateral criteria proposal got passed by the DAO governance.
	Space Doodles was allowed as collateral.
	The liquidation reward winner (originally the highest bidder but now the first bidder) proposal got passed by the DAO governance.
	On May 25, 2022, the protocol TVL reached over 100,000 ETH.
Aug 2022	BendDAO NFT marketplace was launched with collateral listing and down payment buy features.
	BendDAO experienced liquidity crunches and the utilization rate once reached 100%.
	In response to the liquidity crisis, BendDAO proposed parameter modifications in BIP-9 and BIP-10 and were approved. These modifications include gradually reducing the liquidation threshold from 90%, shortening the auction time from 48 hours, removing the requirement that the starting price must be 95% above the floor price, and adjusting the APR base rate to 20%. (As of the publication of this English report, the liquidation threshold is 80% and the auction time is 24 hours.)
	The community proposed to discuss the establishment of a "Non-performing Asset Investment Fund" as a sub-fund under the DAO treasury and to raise a second financing for it.
Sep 2022	BendDAO experienced liquidity crunches twice and the utilization rate once reached 100%.
	BendDAO briefly suspended lending business in response to potential liquidity crunch due to the ETH merge.
	The community approved a proposal for seed round investment in Npics project.
	Moonbirds was allowed as collateral.
Oct 2022	BendDAO community governance proposed to develop yield maximizing function for Yuga Labs' upcoming Ape Sstaking.
	BendDAO developed Ape Staking Pair Listing function, and planned to start auditing by the end of October.

Source: BendDAO, complied by Mint Ventures

Since BendDAO experienced liquidity crunches during 2022 August - September which have profound implications, we briefly describe the incident here. Those who are familiar with the tales can skip this section.

2.2.2 Liquidity Crisis:

In late August 2022, the floor price of all blue chip NFT assets fell lower, triggering liquidation of a batch of collateral assets when the Health Factors fell below 1. Unlike prior NFT price fluctuations, few participated in the auction, making depositors so panicked that many withdrew their ETH funds from the pool. At the same time, it was expected that after the ETH2.0 merge, forked POW ETH chains would appear, and the demand for hoarding ETH to wait for forked coins increased, further leading to the depletion of the ETH pool. Multiple reasons led to a rapid decrease in ETH pool, and the 100% utilization rate. The loan rate once reached 117% and deposit rate 82%. As a consequence, many NFT assets were sitting unbid. Furthermore, the already sluggish NFT market sentiment further deteriorated as the market was filled with fear, uncertainty and doubt (FUD) about the collapse of the BendDAO protocol. A similar liquidity crisis occurred again in September 2022.

In response to the liquidity crisis in late August, BendDAO team proposed to modify some of the parameters, including the following:

- 1. Dropping the auction time from 48 hours to 24 hours*
- 2. Reducing the liquidation threshold from 90% to 80%*
- 3. Increasing the base rate of the APR curve from 10% to 20% (overall lifting in the APR curve)*
- 4. Removing the requirement that the first bid price must be greater than 95% of the floor price.*

In the following days, ETH funds in the pool gradually recovered and FUD sentiment eased, recovering the utilization rate and APR to normal levels.

2.2.3 Roadmap

- To develop Ape Staking Pair Lising function (launched in December 2022)
- To launch “peer-to-peer” lending function
- To introduce more blue-chip NFTs as collateral

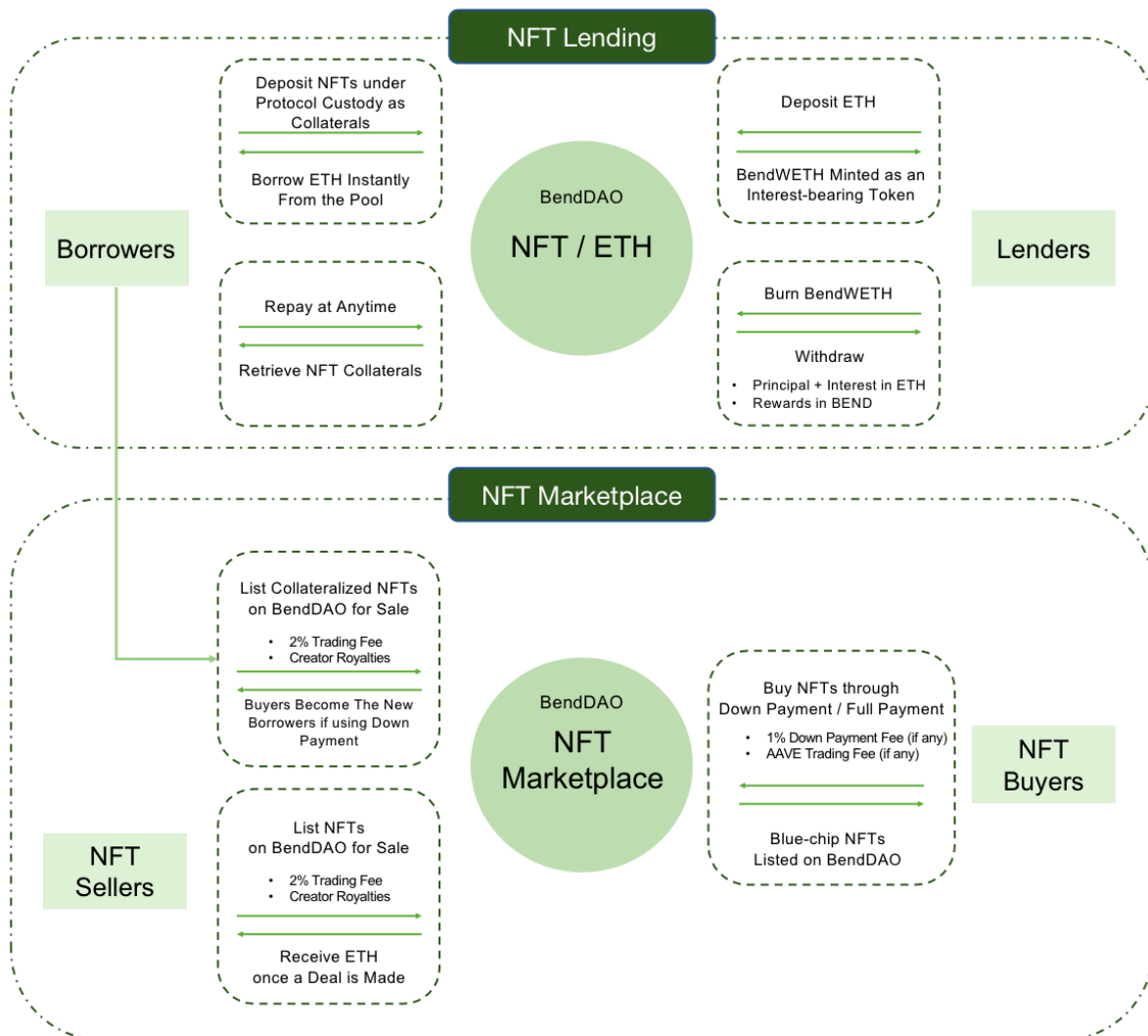
The recent discussion on several governance proposals including the establishment of the non-performing asset investment fund and the second financing plan are expected to have a profound impact on BendDAO.

3. Business Overview

Readers familiar with BendDAO can skip this section.

As of the publication of this report, BendDAO’s main business is NFT lending where users can borrow ETH using Blue-chip NFTs as collateral. Additionally, BendDAO also has an NFT marketplace business that supports users to trade collateralized NFTs, lowering the opportunity costs while borrowing money, and to pay down payment to purchase NFTs. The main revenue stream is the interest rate spread income generated from lending business, and the rest revenue comes from the transaction fees (2% rate) and down payment fees (1% rate) from the NFT marketplace. As of November 6, 2022, the interest income approximated 2,065.11 ETH (of which 30% is allocated to veBEND holders), representing 98.95% of the total revenue.

The BendDAO business structure is shown below:



Source: BendDAO, Mint Ventures

3.1 NFT Lending

BendDAO's lending business adopts a peer-to-pool model. The protocol pool enables borrowers to borrow ETH from the pool instantly according to the NFT floor price at a fixed LTV ratio, and variable APR by using blue-chip NFTs as collaterals.

NFT Collaterals: As of the publication of this report, BendDAO supports 8 blue-chip NFTs, including CryptoPunks, Bored Ape Yacht Club, Mutant Ape Yacht Club, Azuki, Doodles, Space Doodles, Clone X and Moonbirds.

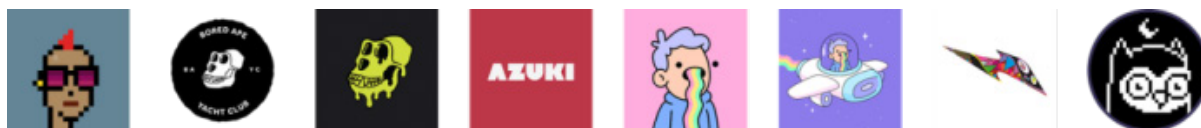


Figure: NFT Collections Supported on BendDAO as Collateral

Source: BendDAO, Mint Ventures

Since the peer-to-pool protocol sacrifices the variety of NFT collaterals for better loan speed, BendDAO supports fewer blue-chip NFTs than most peer-to-peer protocols such as NFTfi and Arcade, and hybrid protocols, such as Pine Protocol and Sodium.

NFT Lending	Protocols & Platforms	Collaterals Supported
Peer-to-Pool Protocols	BendDAO	Supporting 8 blue-chip NFTs as collateral
	JPEG'd	Supporting 8 NFTs as collateral, mostly blue-chip NFTs
	Drops	Supporting 24 NFTs as collateral
Peer-to-Peer Protocols	NFTfi	No limitations on collaterals; supporting 300+ NFTs
	Arcade	Supporting 115 NFTs as collateral
Hybrid Protocols	Pine Protocol	No limitations on collaterals; maintaining 24+ lending pools
	Sodium	Supporting 96 NFTs as collateral
Centralized Protocols	NEXO	clearly supporting CryptoPunks and BAYC

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

Borrowing Assets: Compared with other NFT lending protocols which support more loan assets, BendDAO only supports loans and deposits in ETH, as ETH is the major pricing unit for blue-chip NFTs. ETH is also an important asset for both the demand and supply-side users. Limiting lending assets to ETH also prevents exchange rate fluctuations in other cryptocurrencies. By setting ETH as the only loan asset, protocol risks are controlled in the ETH market, while the addition of multiple assets may introduce other protocol-related risks, like the DAI associated with MakerDAO. BendDAO's focus strategy on the collateral assets and lending assets make the product simple and straightforward, liberating users from setting parameters while helping them control risks, delivering excellent user experience, and thus making BendDAO the leading NFT lending protocol.

NFT Lending	Protocols & Platforms	Borrowing Assets
Peer-to-Pool Protocols	BendDAO	ETH
	JPEG'd	PUSd, Peth (pools available on Curve)
	Drops	ETH, USDC
Peer-to-Peer Protocols	NFTfi	WETH, DAI
	Arcade	WETH, ETH, USDC
Hybrid Protocols	Pine Protocol	WETH
	Sodium	WETH
Centralized Protocols	NEXO	ETH or stablecoins

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

Collateral Pricing: NFT pricing determines the base of how much a user can borrow from BendDAO pool. BendDAO calculates the value of NFT collateral through a built-in price calculator. After getting floor prices on OpenSea and LooksRare through price oracles, BendDAO cleans and parses data for a time-weighted average price calculation..

This valuation method is characterized by **high efficiency, low cost and anti-manipulation**. It helps keep the price on BendDAO away from the low among all floor prices(as is shown in the picture, the pricing of BAYC is not close to the floor price most of the time), but also reduces the risk of the floor price being manipulated, so as to avoid the NFT liquidation being easily triggered.

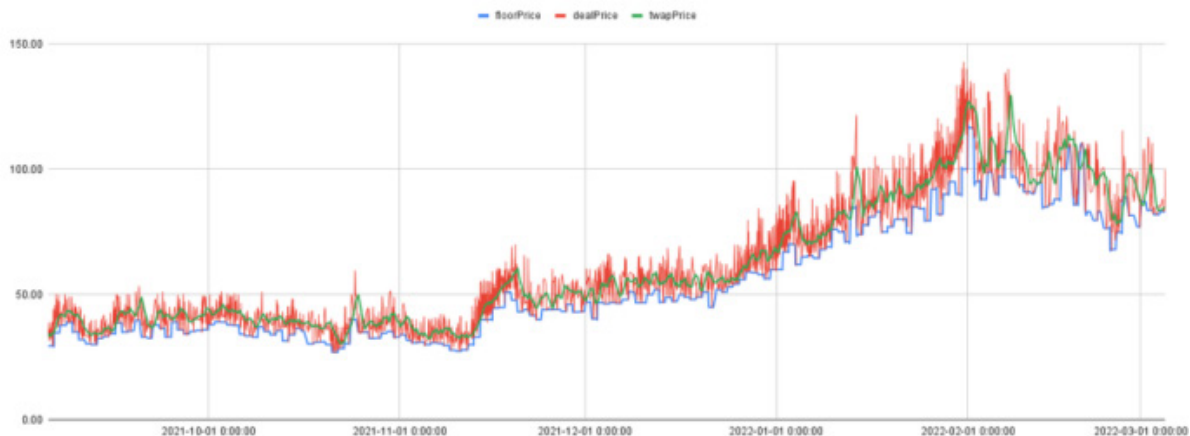


Figure: BAYC's Price from September 2021 to February 2022

Source: BendDAO

Loan-to-Value / LTV: BendDAO sets a fixed mortgage ratio for each type of NFT collateral, with LTV of 40% for BAYC and CryptoPunks and 30% for the rest of the blue-chip NFTs. It is less flexible compared to peer-to-peer lending protocols and other peer-to-pool protocols, but controls the pool risk for the ETH lenders.

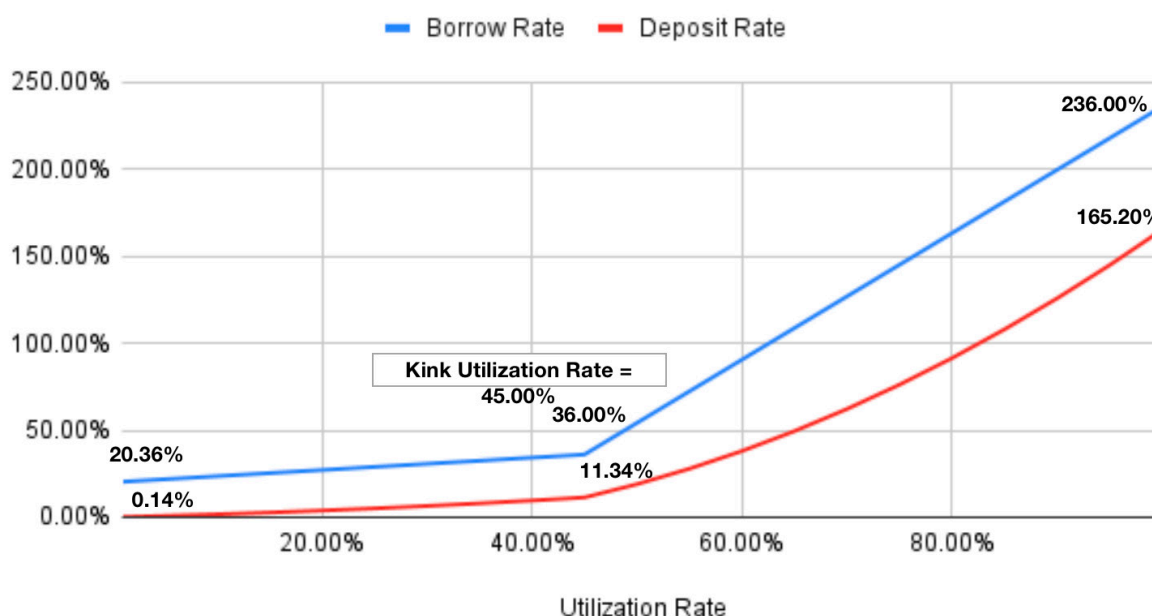
NFT Lending	Protocols & Platforms	Loan-to-Value
Peer-to-Pool Protocols	BendDAO	LTV for BAYC and CryptoPunks is 40%; the LTV for other blue-chip NFTs is 30%
	JPEG'd	Normally 35%; LTV can be boosted to 45% with JPEG Card Cigaratte
	Drops	LTV for BAYC, MAYC and CryptoPunks is 60%; the LTV for other blue-chip NFTs is 35% - 50%
Peer-to-Peer Protocols	NFTfi	No fixed LTV rule.
	Arcade	No fixed LTV rule.
Hybrid Protocols	Pine Protocol	Lenders set LTV for pools.
	Sodium	No fixed LTV rule.
Centralized Protocols	NEXO	10% - 20% LTV

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

Annual Percentage Rate / APR: BendDAO's APR floats with the utilization rate of funds in the pool. In the case of a high utilization rate, APR rises to stimulate deposits and discourage loans, and when it is higher than 45%, the rate rises faster. When it is low, the APR falls, as is shown below.

Borrow Rate and Deposit Rate



来源: BendDAO, Mint Ventures

Figure: BendDAO Interest Rate Curve (November 2022)

The adequacy of the fund pool and the quality of collateral assets determine the health of the protocol, so BendDAO's floating APR curve acts as an automatic adjustment mechanism to maintain the balance of the ETH pool. The interest rate rule of different NFT lending protocols and platforms are compared below:

NFT Lending	Protocols & Platforms	APR
Peer-to-Pool Protocols	BendDAO	Variable APR
	JPEG'd	PUSd borrowing APR 2%, pETH borrowing APR 5%; no lending APR
	Drops	Variable APR
Peer-to-Peer Protocols	NFTfi	Based on borrowers' asking APR
	Arcade	Based on borrowers' asking APR
Hybrid Protocols	Pine Protocol	Based on lenders' offering APR
	Sodium	Borrowers set APR and it increases as time passes
Centralized Protocols	NEXO	10% - 15%

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

In response to the previous liquidity crises, BendDAO team made appropriate adjustments to the several parameters through DAO governance when BendDAO's lending and borrowing rate touched extreme values (as is shown below).



Source: BendDAO, Dune Analytics (@cgq0123) and Mint Ventures

Figure: BendDAO Utilization Rate History (March 2022 - October 2022)

Liquidation Mechanism: The mechanism behind BendDAO liquidation is an NFT auction, another crucial design highlight in the BendDAO protocol. To simplify it further, when the collateral value drops below 80% of the total loan value, the health factor of the collateral decreases below 1, triggering the liquidation of the collateral. When the first bidder puts a bid on the collateral in the auction market, a 24-hour auction process will be initiated. BendDAO is a British-style auction with a starting price greater than or equal to the loan value (prior to the liquidity crisis in August 2022, the starting price was the higher of 95% of the floor price and the loan value). Subsequently, the bidding price shall increase by at least 1% of the loan amount. If the borrower pays at least 50% of the liabilities during the 24-hour auction, the collateral can be redeemed, but the borrower will have to pay a portion of money as a liquidation bonus worth the higher value between 0.2 ETH and 5% of the liabilities to the first bidder. Under such a mechanism, the bidders would come as early as possible to earn a potential liquidation bonus. If the borrower does not repay within 24 hours, the last bidder or the highest bidder gets the NFT.

The health factor is calculated as the following formula:

$$\text{Health Factor} = (\text{Floor Price} * \text{Liquidation Threshold}) / \text{Total Debt}$$

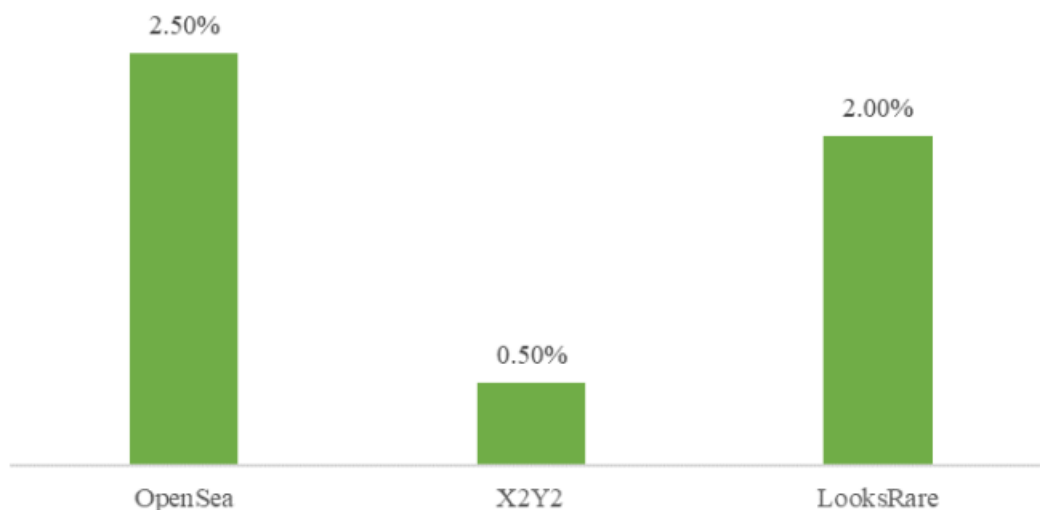
As described in the "Liquidity Crisis" section, the BendDAO team initiated a proposal to adjust the liquidation threshold, auction time, and starting price rules to address the liquidity crisis in August 2022.

Prior to the crisis, BendDAO had a 90% liquidation threshold on collateral. The downward revision was aimed at improving the efficiency of the liquidation mechanism, increasing the sensitivity of its trigger, encouraging borrowers to repay their loans, and raising the flow of funds within the pool and the confidence of ETH depositors.

At the time, the starting bid for an auction was the higher value between the 95% floor price and the total debt, but the rule was adjusted to be greater than or equal to total debt, a change that greatly incentivized market liquidation process for it attracted many NFT flippers to come buy the dip. Previously, 95% of the floor price often outnumbered the total debt amount. Usually NFT flippers and arbitrageurs need to bear transaction market fees and royalties. The 5% room didn't seem attractive enough. For most blue-chip NFTs, the royalties ranged between 2.50% and 5.00% (see the table below), and the BendDAO protocol set up mandatory royalties for NFT creators. Additionally, major trading markets charge 0.00%-2.50% fees (see the table below), so the question would be whether the cost for NFT flippers is less than 5% of the floor price.

	BAYC	CryptoPunks	MAYC	Doodles	Space Doodles	Azuki	CloneX	Moonbirds
Royalties	2.50%	0.00%	2.50%	5.00%	5.00%	5.00%	5.00%	5.00%

Trading Fees on Different NFT Marketplaces



When BendDAO no longer requires the starting price to be at least 95% of the floor price, the auction mechanism becomes more profitable for the NFT flippers, providing more room for arbitrage and easing the accumulation of potential "non-performing assets".

The liquidation mechanism is shown in the following diagram.

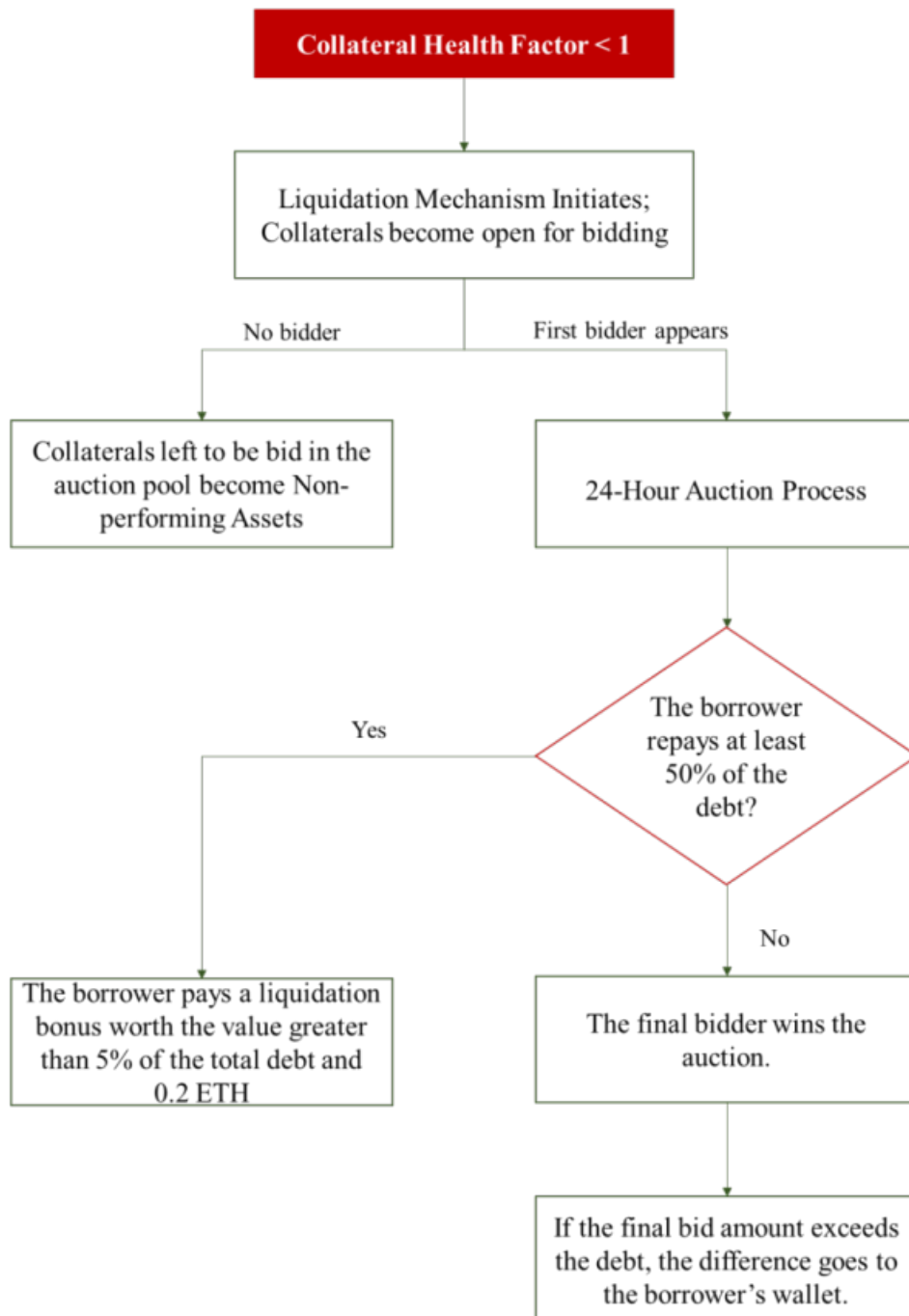


Figure: BendDAO Liquidation Mechanism

Source: BendDAO, Mint Ventures

3.2 NFT Marketplace

BendDAO's built-in NFT marketplace was officially launched in August to provide more services for NFT users. It supports borrowers to sell collaterals while borrowing ("Collateral Listing"), and allows users to purchase NFTs by paying only a part of the down payment ("Down Payment"). Recently, BendDAO began to support buyers' bids for listed NFTs.

Collateral Listing: This feature allows users to sell their collateral on BendDAO's built-in NFT marketplace while borrowing against NFTs. The liquidation mechanism is the same as the borrowing business. Collateral listing still bears compounding interests. Unlike common lending business, the interest will be borne by the new NFT owner, namely the buyer, if the collateral listing is closed in an NFT transaction. After the buyer pays the bid price, the interest will go to the protocol and the NFT seller will receive the sale price less the loan amount and interest. If the seller withdraws the listing at any point in time, the loan interest accrual will remain in effect and the person who listed the order, namely the borrower, will be liable for the interest. The mechanism is designed as below.

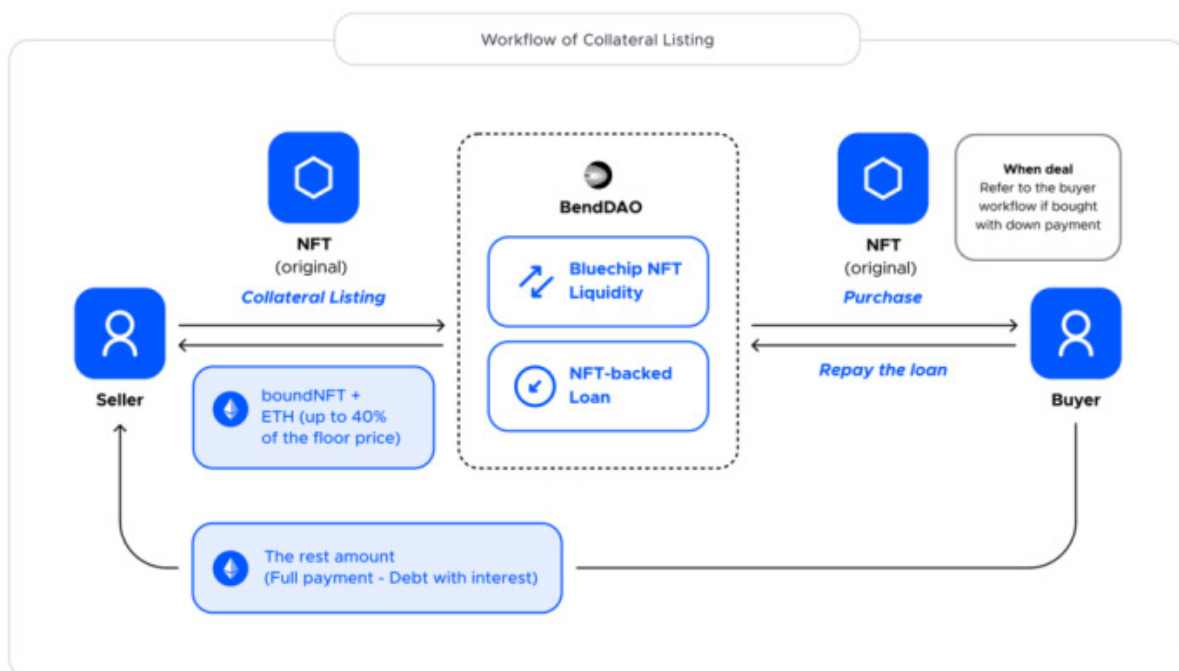


Figure: Collateral Listing

Source: BendDAO

BendDAO charges sellers a 2% transaction fee, a modest level compared to other major NFT marketplaces (2.50% on OpenSea, 2.00% on LooksRare, 0.50% on X2Y2). To trade on BendDAO, the seller also needs to pay royalties to the NFT project.

Down Payment: With the "down payment" feature, users purchase blue-chip NFTs from BendDAO Market or other platforms (CryptoPunks Market, OpenSea, LooksRare, and X2Y2) with a certain down payment (60% at the minimum), while the remaining funds are instantly provided by Aave Flash Loan features for that moment. After purchasing the NFT with down payment and the loan from Aave, the buyer automatically takes on the liability to BendDAO as the transaction turns into a borrowing activity. The interest compounding rule, repayment rule, and liquidation is all the same with other borrowers.

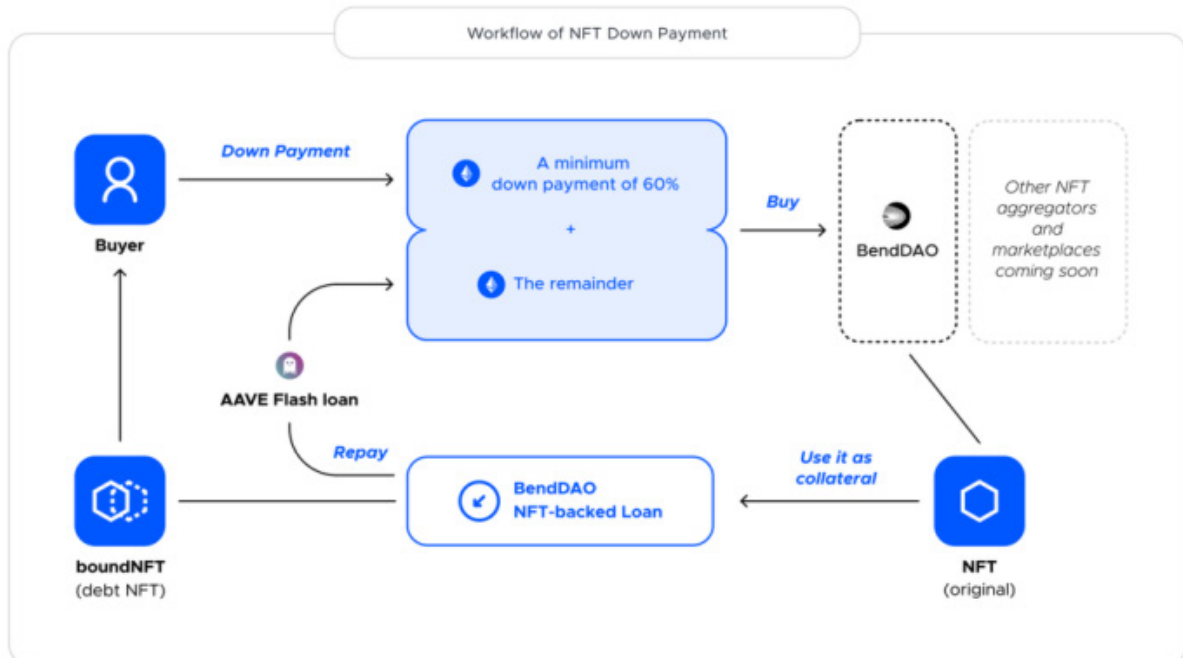


Figure: Down Payment Diagram

Source: BendDAO

BendDAO charges a 1% transaction fee for the "down payment" feature. Additionally, as the buyer takes out the flash loan from Aave, he/she needs to pay for the transaction fee (0.09%) to Aave.

To sum up, BendDAO's NFT marketplace provides users with a listing service that reduces the opportunity costs while NFTs are collateralized. The "down payment" feature leverages Aave Flash Loan to allow users purchase with leverage. However, the usage and business data show that only a few users are currently using the two new features, hence accumulating a small business volume. As of November 6, 2022, the transaction fees have totaled 19.38 ETH (50% of which is allocated to veBEND holders) since its launch in August, and the down payment fees totaled 2.63 ETH (same as above), which together accounted for 1.05% of the cumulative income.

3.3 BendApeStaking Business (Now active on the Mainnet)

Yuga Labs launched the Ape Staking feature in December 2022, distributing staking rewards for those who hold BAYC, MAYC, BAKC and \$APE. Since part of Yuga Labs' staking pools require to hold both NFT and \$APE tokens (as shown below), BendDAO community proposes to develop a pair listing function based on Ape Staking to serve users who only possess \$APE or NFT. This feature pairs NFT and \$APE in the market to maximize their staking rewards.

As of the publication of this report, the function has been audited and launched on the Mainnet.

ApeCoin Staking

POOLS & ALLOCATION

Staking Pools

AIP-21 specifies the four staking pools and their caps. Note that these pools are independent. Actions performed in one pool do not affect actions in another pool.



Figure: Yuga Labs Ape Staking program

Source: Twitter @HorizenLabs

4. Business Data

Since the mainnet launch in March 2022, BendDAO has witnessed a steady increase in business volume, with an increasing number of blue-chip NFT loans taken out. The previous liquidity crises also helped build the protocol's reputation in the industry, and the launch of the new features brings in new sources of protocol revenue. The business data of BendDAO indicate that the protocol has been operating well since its launch. In the future, **the recovery of the blue chip NFT market, the increasing number of users will attract more attention to the NFT lending protocols. As the leader of the NFT-Fi space, BendDAO is likely to keep the leading position as the market continues to expand.**

4.2 Loans and Repayment

As of November 6, 2022, BendDAO's cumulative loan amount has reached 73,611 ETH, and the current loan amount is 14,696 ETH. The repayment ratio is relatively healthy, currently 80.04%. The loan volume surged significantly in April 2022. At that time, the NFT market was still hot. Yuga Labs' "unofficial" roadmap revealed airdrops of Otherdeeds to NFT holders. At that time, there were a lot of BAYC, MAYC and Blue-Chips NFT holders borrowing ETH through BendDAO to buy more NFTs for the airdrop. At that time, BendDAO was used as a leverage tool for NFT users.

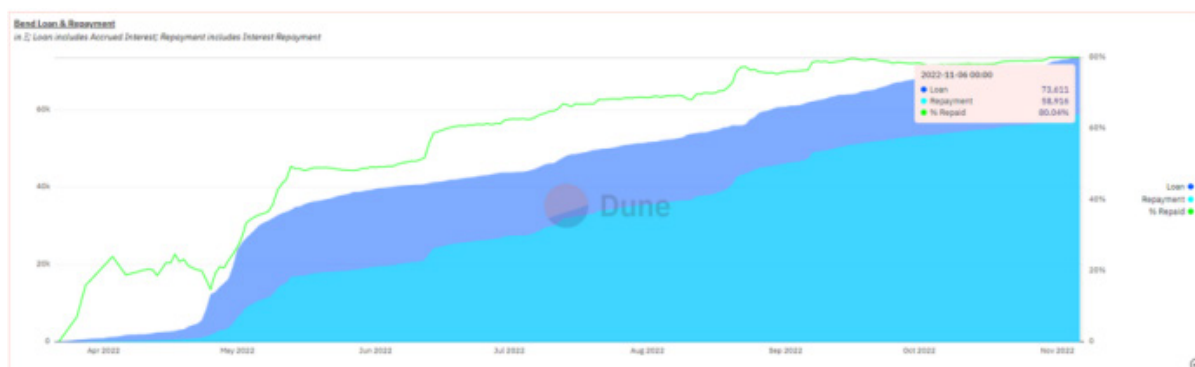


Figure: BendDAO Repayment History

Source: Dune Analytics (@cgq0123)



Figure: BendDAO Daily Loans

Source: Dune Analytics (@cgq0123)

4.3 Number of Borrowers

The number of borrowers of the BendDAO increased rapidly at the end of April. It was mainly due to Yuga Labs' Otherdeeds drop to BAYC and MAYC holders. Since then, the number of users of the BendDAO protocol has increased at a slower pace. As of November 6, 2022, the number of lenders was 1,104, and the number of depositors was 891, of which 243 accounts participated in both lending and borrowing activities.

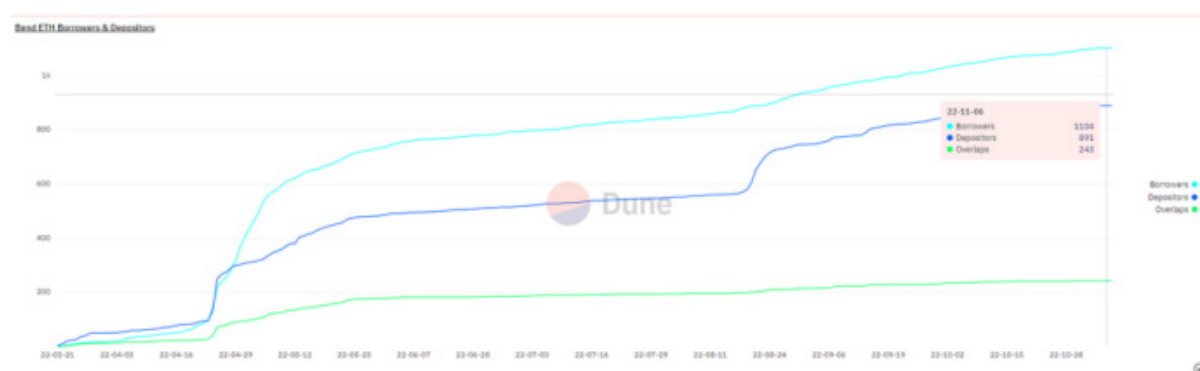


Figure: BendDAO Users

Source: Dune Analytics (@cgq0123)

By comparison, BendDAO overwhelmingly surpasses other peer-to-pool NFT lending protocols. Compared with NFTfi, a peer-to-peer NFT lending protocol, BendDAO supports fewer NFTs as collateral but has a higher average collateral value. Statistics show that as of November 6, 2022, 119 blue-chip NFTs are supported on NFTfi for borrowing including the 8 NFTs supported on BendDAO and the rest are mostly long-tail NFT assets.

NFT Lending	Protocols & Platforms	Collateral Rules	No. of Collections Allowed
Peer-to-Pool Protocols	BendDAO	Supporting 8 blue-chip NFTs as collateral	1,046
	JPEG'd	Supporting 8 NFTs as collateral, mostly blue-chip NFTs	166
	Drops	Supporting 24 NFTs as collateral	127
Peer-to-Peer Protocols	NFTfi	No limitations on collaterals; supporting 300+ NFTs	2000+
	Arcade	Supporting 115 NFTs as collateral	700+
Hybrid Protocols	Pine Protocol	No limitations on collaterals; maintaining 24+ lending pools	24
	Sodium	Supporting 96 NFTs as collateral	12
Centralized Protocols	NEXO	clearly supporting CryptoPunks and BAYC	Unknown

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

4.4 Utilization Rate

The utilization rate of funds determines the lending and borrowing APR of the agreement, which is an important parameter for users and an important indicator of the health and sustainability of the protocol. BendDAO's fund utilization rate remains below 65% most of the time (the turning point of the interest rate curve before the liquidity crisis in August 2022). Interest rates have reached extreme values during the previous liquidity crisis moments in August and September. It is worth noting that BendDAO's token rewards for borrowing behaviors also have a direct stimulative influence on lifting the utilization rate. For example, at a certain time on November 15, 2022, the loan interest rate is 28.47%, the BEND mining reward is 16.23%, and the net loan interest rate under the token subsidy is 12.24%.



Figure: NFT Utilization Rate (March 2022 - October 2022)

Source: BendDAO, Dune Analytics (@cgq0123), Mint Ventures

4.5 Liquidation

As of November 6, 2022, a total of 126 NFT collaterals have been liquidated (excluding collaterals that once triggered liquidation, but the lender repaid the loan within the auction time and ended the liquidation process). Among them, a large number of collaterals are MAYC and Doodles collections, which mainly occurred during the liquidity crises in August and September 2022. Earlier in May, a negative incident associated with the Azuki team led to a serious dissipation of community consensus, and the floor price fell rapidly, which also triggered many Azuki to liquidate.

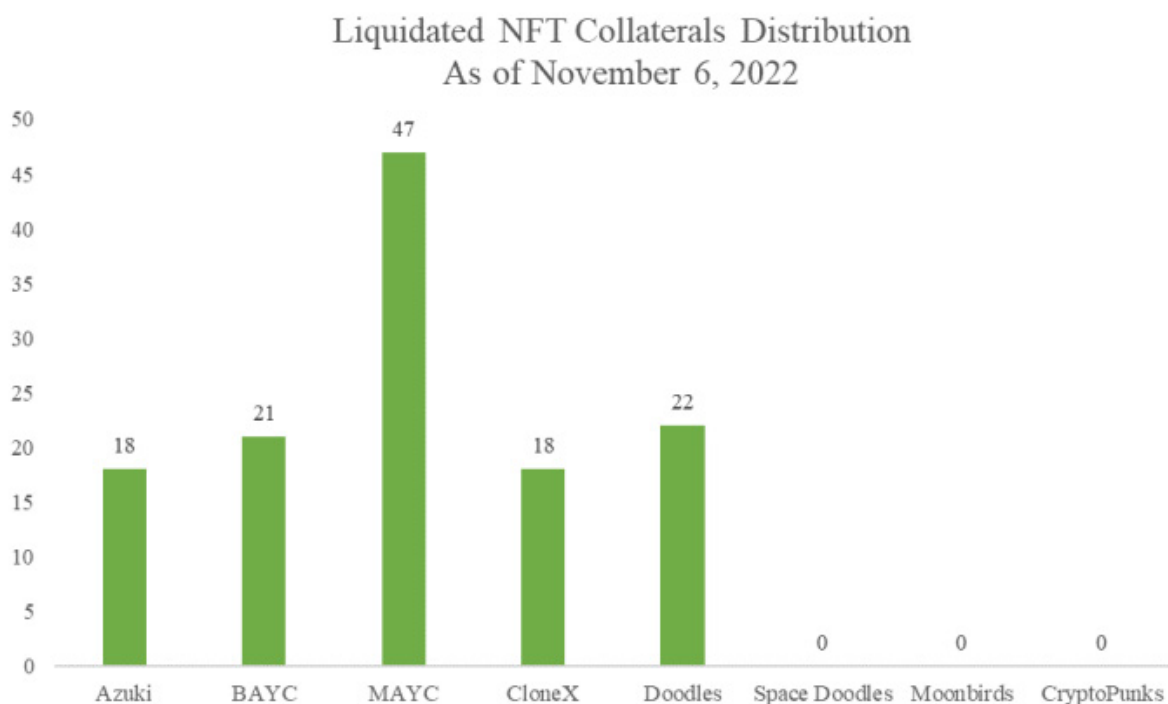


Figure: The distribution of liquidated NFT collaterals on BendDAO

Source: Dune Analytics (@cgq0123), compiled by Mint Ventures

4.6 Protocol Revenue Composition

Currently, the sources of the BendDAO protocol fees include (1) loan interests, (2) transaction fee from the marketplace (paid by the seller, 2%), and (3) down payment fee (paid by the buyer, 1%). According to the veBEND model, veBEND stakers can share protocol revenue, which is composed of (1) 30% of the interest difference collected by the protocol, (2) 50% of the total transaction fee, and (3) 50% of the down payment fee. This part of the income goes to the treasury and is regularly and fully shared with veBEND holders.

According to historical data, interest income is the main source of income. As of November 6, 2022, loan interest accounted for 98.94% of the total cumulative revenue, whereas the transaction fee and down payment fee only accounted for 1.06%. The loan interest income accounted for 98.25% of the Treasury income, which is also the total amount shared among all veBEND holders.

During the liquidity crises in August and September, the utilization rate and APR peaked, and the interest income soared, as is shown below. At normal times, the daily revenue is about 2-3 ETH.

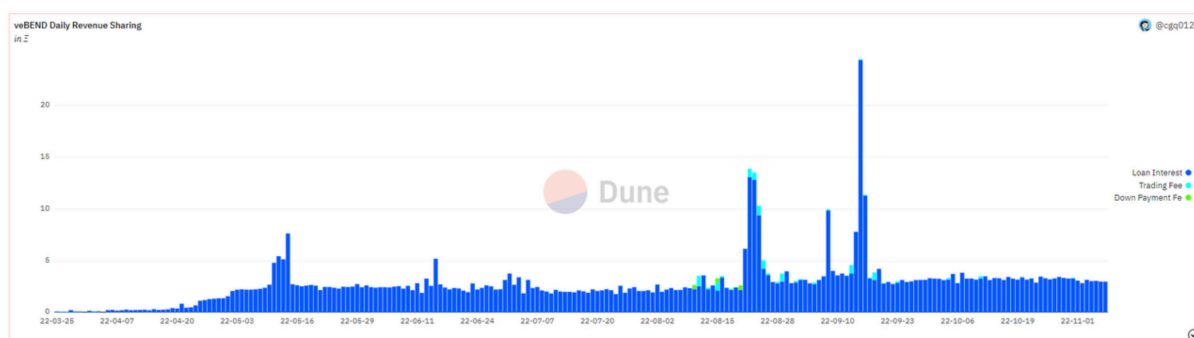


Figure: BendDAO Protocol Revenue (to veBEND holders)

Source: BendDAO, Dune Analytics (@cgq0123)

5. Business Analysis

5.1 High PMF products deliver an excellent user experience in terms of capital efficiency, security, and simplicity.

At present, blue-chip PFPs account for most of the NFT market, and BendDAO's business accurately serves this largest share. The overall NFT market experienced a frenzy around PFPs from the second half of 2021 to the beginning of 2022. PFP sales account for most of NFT transactions on Ethereum. During this period, several blue-chip PFPs became the mainstream market. According to NFTGo.io, as of the beginning of November 2022, PFPs account for about 58% of the overall Ethereum NFT market. Despite the bear market, the 7-day trading volume of blue-chip NFTs usually accounts for 30% to 40%, and the trading volume of PFPs usually far exceed other NFT types, such as GameFi's NFT assets, art collections or Metaverse assets. BendDAO only supports blue-chip NFT collections, focusing on serving the largest and the most active NFT segments in the market. Compared with lending protocols that serve all NFT assets at the same time, although BendDAO has given up on non-blue-chip market, only supporting a few Blue-chip PFPs as collateral makes valuation easier and a fixed LTV reasonable, simplifying the borrowing process users.

Peer-to-pool protocols have outstanding advantages in the loan speed. The unit price of blue-chip PFP is relatively high, and the capital efficiency of holding NFTs is low. Although the traditional peer-to-peer protocols in the market can provide flexibility in pricing rare NFTs, the scarce and expensive blue-chip PFPs normally face low loan amounts and high interest rates. BendDAO's peer-to-pool model allows some blue-chip PFP holders to immediately borrow ETH from the pool, which greatly improves the borrowing speed. The protocol valuation model ensures that the floor price will not be too low and has a certain degree of resistance to manipulation. The loan interest rate is somehow predictable along the APR-Utilization Rate curve.

Security is the focus of the team. Allen, one of the founders of BendDAO, and other members have repeatedly mentioned the importance of protocol security in public. The protocol code has also undergone a complete code audit, and every time a new function is launched, there is also a third-party audit to check the code security. In terms of product design, BendDAO emphasizes the security of the NFT assets. The

NFT collaterals in the protocol will be turned into boundNFT which guarantees the security of users' assets. The boundNFT retains the metadata and Token ID of the NFT, and has the characteristics of being non-transferable and non-approvable.

The simple and plain design brings a good user experience. BendDAO's customer acquisition success lies in its simple product form. Products that reduce the difficulty of user cognition and operation can often win faster. BendDAO's operation process is streamlined, and the product usage logic is easy to understand. The protocol is positioned in the blue-chip NFT market, and only supports 8 blue-chip NFT series, and the loan assets only support ETH. Users do not need to set a lot of parameters such as LTV, interest rates, or duration to get the loan. Compared with other lending protocols, BendDAO is simpler and easier to understand, which saves users the trouble of setting parameters. It is friendly to junior NFT players. Although the focus of business has weakened the flexibility, BendDAO can meet the most demand of the largest share of NFT users.

BendDAO's first-mover advantage has helped the product gain a lot of customers. BendDAO pioneered the "peer-to-pool" lending model. Among the many protocols classified as "peer-to-pool", the more well-known ones are Drops and JPEG'd. Drops lending business was launched on the mainnet in May 2022, and JPEG'd in April 2022. Before the launch of BendDAO (March 2022), the NFT liquidity solutions available in the market were mostly peer-to-peer protocols, such as NFTfi, Pine Protocol, Arcade.xyz, but none of them really solved the pain point of loan speed. Users of the protocols often need to wait for a long time for matching. Blue-chip NFT holders may need to accept excessively high interest rates and low loan amounts. When BendDAO appeared on the market, blue-chip NFT users rushed to the protocol for its fast liquidity.

5.2 The protocol enriches the NFT gameplay and becomes a tool for professional NFT traders.

The simple lending protocol becomes a "leverage tool" for professional NFT traders, further enhancing BendDAO's reputation in the blue-chip NFT community. From April to May 2022, Yuga Labs launched the Otherdeeds collection associated with its metaverse plan, and planned to airdrop Otherdeeds to BAYC and MAYC holders. The design of the BendDAO protects the rights of NFT holders to receive airdrops. Therefore, many blue-chip NFT users borrow funds through BendDAO against BAYCs and MAYCs and purchase more Ape NFTs to secure more Otherdeeds. After receiving the airdrop, they repay the loan and get back the NFT collateral. The Otherdeeds airdrop event of Yuga Labs had a positive effect on enhancing the influence of the BendDAO protocol in the Yuga Labs community, allowing many NFT users to make full use of the product. It marked many loyal users' first acquaintance of BendDAO.

The auction market has become a great place for NFT flippers to buy blue-chip NFT dips. BendDAO's liquidation mechanism makes it profitable for traders who are optimistic about the NFT market. Traders can find less expensive blue-chip NFTs in the auction market on BendDAO and then flip them for a profit. There are a group of people in the market who specialize in NFT flipping such as Twitter KOL @Franklinkisbored. Franklinisbored is the sixth largest BAYC holder (dynamically changing all the time) in the world, and as of November 6, 2022, he owned 61 Boring Ape NFTs. In addition, he has also become a well-known NFT Flipper by repeatedly buying low and selling high with BAYC and MAYC collections. We can see from the BendDAO auction records that Franklinisbored is extremely active on BendDAO, and has participated in bidding 49 times in history as of November 6, 2022. He is also the user with the highest cumulative loan amount on BendDAO, borrowing more than 15,000 ETH in total. There are also many other professional NFT players other than Franklinisbored who actively participate in bidding for relatively low-priced blue-chip NFTs. According to the auction records, as of November 6, 2022, we found that 42 different addresses actively participated in the auction (accumulative participation ≥ 5 auctions), of which 13 addresses have accumulated more than 10 auctions,

as shown in the table below. The existence of BendDAO makes the circulation of expensive blue-chip NFTs more frequent, bringing different gameplay to the market.



Active Bidding Address ⁽¹⁾	Number of bids ⁽²⁾
franklinisbored.eth	49
\x0bf...36ac	19
iamtheape.eth	19
metali.eth	18
\x4c2...f3fb	17
\x612...fe4a	17
arigato.eth	16
cryptoshoveler.eth	14
frontsquat.eth	13
zymerce.eth	13
\x570...2b12	11
pokgai.eth	11
dynasty.eth	10

Around November 15, 2022, due to a quick drop in the floor price, a large number of BAYC collaterals triggered liquidation. However, unlike previous times, the participation in the liquidation auction was more active, and the first bidder appeared much quicker than previous FUD time. After experiencing the previous crises, the market seems to build more confidence in the blue-chip NFTs' value. BendDAO's liquidation auction market allows the bid to start from the total debt of the loan, which usually is a discounted amount of the floor prices. The short-term floor price decline creates opportunities for NFT flippers to buy the dip from BendDAO and flip when the market recovers.

5.3 The developer team and DAO governance work together to promote protocol progress

The BendDAO core team has always encouraged the community to participate in governance and is a practitioner of the decentralized DAO model. As can be observed on social media, core team members have been encouraging community members to participate in governance and brainstorm ideas for protocol development. Some of these efforts include opening periodic working meetings to the public and hosting a weekly Twitter Space to discuss protocol development and hot topics in the NFT market @The Big Bend Theory, and public encouragement of community members to participate in forum discussions, etc. On various occasions, the team showed an open attitude towards community opinions and suggestions. In addition, it is worth mentioning that before the mainnet launch of BendDAO, the team adopted the IFO (Initial Fair Offering) method to open financing to everyone, instead of raising funds from venture capitalists, and also airdropped tokens to the NFT community as an attempt to decentralize voting rights, and encourage the community to join BendDAO governance.

The DAO governance helps the protocol to continuously improve and strengthen the binding relationship between users and the protocol. The lending business using the agreement will receive BEND token mining rewards. After locking the BEND tokens, users will get veBEND, and have rights to vote and to share the income of the agreement. The subtlety of the Voting Escrow model learned from Curve is that it

gives protocol users governance rights and realizes real decentralized governance. It also enhances the user's sense of belonging and loyalty to the product.

The following discussion on BendDAO's forum demonstrates that decentralized community participation in protocol governance promotes protocol development.

① Parameter modification proposals after the liquidity crisis: The parameter adjustments after the liquidity crisis were the teamwork result of core member guidance and decentralized governance. The team members proposed to implement gradual changes to four important parameters, bidding time, liquidation threshold, bid price rules, and interest rates, in stages, and gradually increase the intensity. However, in terms of some parameters, the community voted to settle in the moderate area. The final decision of the liquidation threshold is set at 80% instead of the more radical 70%, the auction time is determined to be 24 hours instead of 4 hours. Currently the protocol is running normally with a new set of parameters after the change.

② Discussion on setting up a Non-Performing Asset Investment Fund": After the liquidity crisis, some people proposed that measures should be taken to prevent the next FUD sentiment from causing another liquidity crunch. The new fund will acquire the NFT collaterals with less than 0.8 Health Factor with no bid. This fund is also intended to be open to institutions, NFT project teams, etc. The proposal is still in the discussion, but the addition of new capital is expected to bring more high-quality resources to BendDAO and help it expand.

③ BendApeStaking, a pair listing feature for the Ape Staking function: When the Ape Staking was about to be launched by Yuga Labs, BendDAO community proposed to develop a pair listing function help users maximize staking rewards for those who only hold NFTs and those who only hold ApeCoins. By the time the English report is published, the matchmaking business has been launched.

BendDAO encourages and supports the community to participate in the governance of BendDAO. Essentially, BendDAO has been pushing the NFT industry towards a more decentralized community by encouraging more members and users to participate in building the product and providing suggestions. While it is improving the protocol's ability to better serve the market, a good brand image has also been established, and the binding relationship between users and the protocol ent has been subtly enhanced.

6.Team and Financing

6.1 Team Profile

BendDAO does not disclose information about the team members on its official website, but we can learn about the progress of the development team on social media (Twitter, Discord, etc.). Starting from August 2022, team members conduct a weekly Twitter Space event called "The Big Bend Theory", and actively participate in discussions on topics related to the NFT industry on social media. In addition, regular internal meetings of the team are also open to the public. Therefore, BendDAO's "anonymous team" is not actually anonymous, and has been continuously upgrading the product and serving the community.

6.2 Financing

Unlike most other Web3 projects, BendDAO did not raise funds from venture capitalists. There was no whitelist, no pre-sale list, no private investors. Instead, it adopted IFO (Initial Fair-Launch Offering) to raise funds from the public, which started in late March 2022. A whale address closed the IFO with a large amount of commitment, ending the IFO in early April. A total of 3,000 ETH was raised (1 ETH = 333,333 \$BEND), and a total of 1 billion tokens were issued to the public participating in IFO. 66% of the raised funds is used to provide initial liquidity in the BendDAO ETH pool, and the rest 34% will be used for the operation.

6.3 The Second Financing Plan

During the liquidity crisis, there was a discussion on the establishment of a "Non-Performing Asset Investment Fund" and its financing event as a second round of financing of BendDAO. The new round of financing plans to use 50% for the establishment of the fund to purchase discounted NFT collaterals left unbid in the protocol, and the remaining 50% is used to establish an ecological fund to invest in and incubate BendDAO-related projects. The new round of financing valued the BendDAO at \$80 million, intending to raise 6,208 ETH from investment institutions, NFT projects and communities, and providing investors with 1 billion \$BEND tokens from the treasury (accounting for 10% of the total issuance). As of the publication of this research report, the discussion has not yet formed a formal voting proposal.

7.Business Analysis

7.1 NFT Lending Industry

Since the NFT Boom in 2021, the global NFT market has gradually expanded. Although the current macroeconomic outlook is bleak and the overall cryptocurrency market has been affected by multiple factors, the size of the NFT market is still growing slowly amidst twists and turns. At present, the NFT market size on Ethereum is about 22.3 billion U.S. dollars. Compared with less than 62 million U.S. dollars at the beginning of 2021, it has achieved a 360-fold increase in the past two years. From the beginning of 2022 to the present, the transaction volume of Ethereum NFT is about 21 billion US dollars. Despite the bear market, it still has a 37% increase compared to the 15.3 billion US dollars transaction volume in 2021.

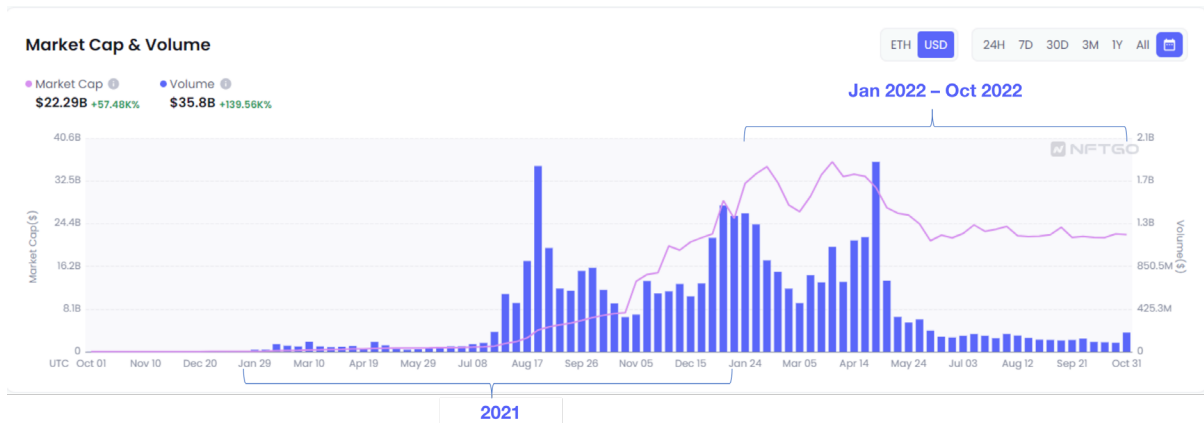


Figure: NFT Sales Volume on Ethereum between January 2021 and October 2022
Data source: NFTGo.io

As for the future development of the NFT market, we believe that the blue-chip PFPs, GameFi assets and NFT assets with high value of utility will continue to bring vitality to the industry. At present, the landscape of blue-chip PFPs has emerged, and the NFT projects behind are also carrying out a variety of activities to construct the empire around the IP such as Ape Staking and all other community activities. GameFi projects are emerging one after another. The NFT narrative has changed constantly while the industry accumulates many NFT assets, which will also become important elements of the SBT (Soul-Bound Token) on-chain in the future. As the NFT bubble diminishes, users gradually realize the essence of NFT and its core value and impact on the cryptocurrency field. NFTs with high utility value will be more adopted in real life. Many web2 brand owners gradually explore the NFT and web3 field. For example, the new membership system "Starbucks Odyssey" released by Starbucks integrates NFT products, bringing customers a new web3 experience, and bridging the gap between web2 and web3 world. As more and more people enter the field of cryptocurrency, NFTs will be penetrated into all aspects of life even further. Although there are both pessimistic and optimistic voices about the NFTs in the future, we believe that the NFT market will further expand, and the NFT-Fi segment has the potential to grow further.

The NFT Boom in 2021 will also ignite the path to NFT Financialization. With the increasing number of NFT users, the pain points of NFT pricing, lack of liquidity, and low capital utilization have become more prominent. Lending protocols, fragmentation protocols, renting protocols, aggregators, and marketplaces emerge one after another. Among all NFT-Fi protocols, lending protocols are relatively active and popular, providing NFT users with a direct way to obtain liquidity, and also providing DeFi users with options for depositing. However, if the NFT-Fi expects a boom like DeFi Summer, valuation and price oracles are some of the problems that need to be resolved.

7.2 Competitive Landscape

- (1) Peer-to-peer (P2P) lending protocols refer to those that provide lending and borrowing matching services between individual users. By matching the interest rate, loan term, NFT collection and the loan amount, the borrower and the lender reach an agreement and make a loan transaction.
- (2) Peer-to-Pool/ Peer-to-Protocol lending protocols form a lending and borrowing relationship between users and the protocol. The mechanism allows users to borrow directly from a liquidity pool by providing NFTs to the protocol as collaterals, while the depositor provides funds to the pool to earn interest income (no depositor in certain peer-to-pool protocols, such as JPEG'd).
- (3) Hybrid lending protocols which integrate peer-to-peer and peer-to-pool mechanism. Sodium recently launched is a typical example of hybrid lending, whereby borrowers set up the interest rate, the term and the loan amount to establish an individual pool, where multiple borrowers can deposit funds into the pool to earn interest income.

(4) Centralized NFT lending platform, where the platform will evaluate the collateral and then issue the loan after the borrower stakes NFTs to the platform.

The major players are categorized as shown below.

NFT Lending	Protocols & Platforms	Collaterals Supported	Borrowing Assets	Loan-to-Value	APR	Loan Speed
Peer-to-Pool Protocols	BendDAO	Supporting 8 blue-chip NFTs as collateral	ETH	LTV for BAYC and CryptoPunks is 40%; the LTV for other blue-chip NFTs is 30%	Variable APR	Very fast
	JPEG'd	Supporting 8 NFTs as collateral, mostly blue-chip NFTs	PUSd, Peth (pools available on Curve)	Normally 35%; LTV can be boosted to 45% with JPEG Card Cigarette	PUSd borrowing APR 2%, pETH borrowing APR 5%; no lending APR	Very fast
	Drops	Supporting 24 NFTs as collateral	ETH, USDC	LTV for BAYC, MAYC and CryptoPunks is 60%; the LTV for other blue-chip NFTs is 35% - 50%	Variable APR	Very fast
Peer-to-Peer Protocols	NFTfi	No limitations on collaterals; supporting 300+ NFTs	WETH, DAI	No fixed LTV rule.	Based on borrowers' asking APR	Slow
	Arcade	Supporting 115 NFTs as collateral	WETH, ETH, USDC	No fixed LTV rule.	Based on borrowers' asking APR	Slow
Hybrid Protocols	Pine Protocol	No limitations on collaterals; maintaining 24+ lending pools	WETH	Lenders set LTV for pools.	Based on lenders' offering APR	Fast
	Sodium	Supporting 96 NFTs as collateral	WETH	No fixed LTV rule.	Borrowers set APR and it increases as time passes	Fast
Centralized Protocols	NEXO	clearly supporting CryptoPunks and BAYC	ETH or stablecoins	10% - 20% LTV	10% - 15%	Slow

Data Collected on November 6, 2022

Source: BendDAO, JPEG'd, Drops, NFTfi, Pine Protocol, Arcade, Sodium, NEXO; compiled by Mint Ventures

From the chart above, we can see that the current NFT lending protocols are slightly different in terms of the types of NFT collateral supported, the type of loan assets supported, the LTV, the interest rate, and the loan speed. We can also see that the loan speed, loanable funds, loan interest rates, and the types of collateral NFT supported are often difficult to balance at the same time. None of the protocols have integrated all in one product yet. Each platform strives to meet market demand as much as possible in all dimensions and find a balance among multiple restrictions. BendDAO is unattractive in terms of LTV and the variable interest rate, but it has an outstanding advantage in terms of loan speed and collateral asset quality. With its easy-to-understand product logic and excellent user experience, the protocol has gained a large share in the NFT lending market.

7.3 Tokenomics

7.3.1 Basic Information

\$BEND token is the governance token of BendDAO, with a circulation of 10 billion. The fundraising was open to the public through IFO (Initial Fair-Launch Offering) , accounting for 10% of the total circulation. The IFO started in March 2022, and was completed in April. A total of 3,000 ETH will be raised, of which 1,980 ETH (66%) was used as the basic funds for the loan pool, and 1,020 ETH (34%) was used as the operating capital for the development team.

7.3.2 The Demand of \$BEND token

- BendDAO adopts the Voting Escrow model, which allows users to stake \$BEND tokens to obtain veBEND, and participates in governance voting and protocol income distribution. In the protocol income, 30% of the loan interest fee, 50% of the transaction fee (rate 2%) and 50% of the down payment fee (rate 1%) is shared with veBEND holders, and the rest will go to the Treasury.
- \$BEND token also has a pool on Uniswap, which allows for deposits for liquidity mining.

7.3.3 The Supply of \$BEND token

Currently, the major supply of \$BEND tokens to the market is the distribution of \$BEND token rewards to lenders, depositors, and liquidity providers (LPs) on Uniswap (accounting for 43% of the total tokens in total). It is expected that starting from March 2023, the developer team tokens will begin to be unlocked linearly over a three-year period, which will also be another major supply of tokens circulating on the market. According to the current vesting schedule of \$BEND, the developer team's monthly vesting of tokens (if released on a monthly basis) will account for about 3% of the current circulation.

7.3.4 Token Allocation

As is shown in the figure below, \$BEND tokens are mainly allocated to community rewards, developer teams, and treasury reserves. This distribution embodies the concept of community governance. Most of the tokens are used to reward users of the protocol as reward. The increase in protocol users will bring an increase in income, and the incentives will be transmitted to veBEND holders participating in governance. In addition, 5% of \$BEND tokens was airdropped to potential users of BendDAO from March to June 2022 as their user onboarding and marketing strategy, including some OpenSea users, some blue-chip NFT holders, some NFTfi users, and some OG users on Discord.

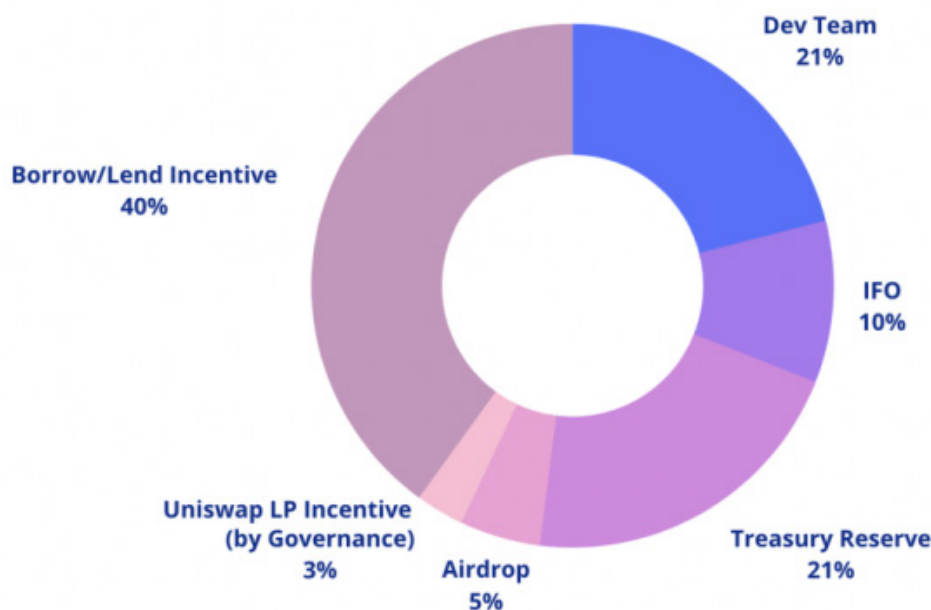
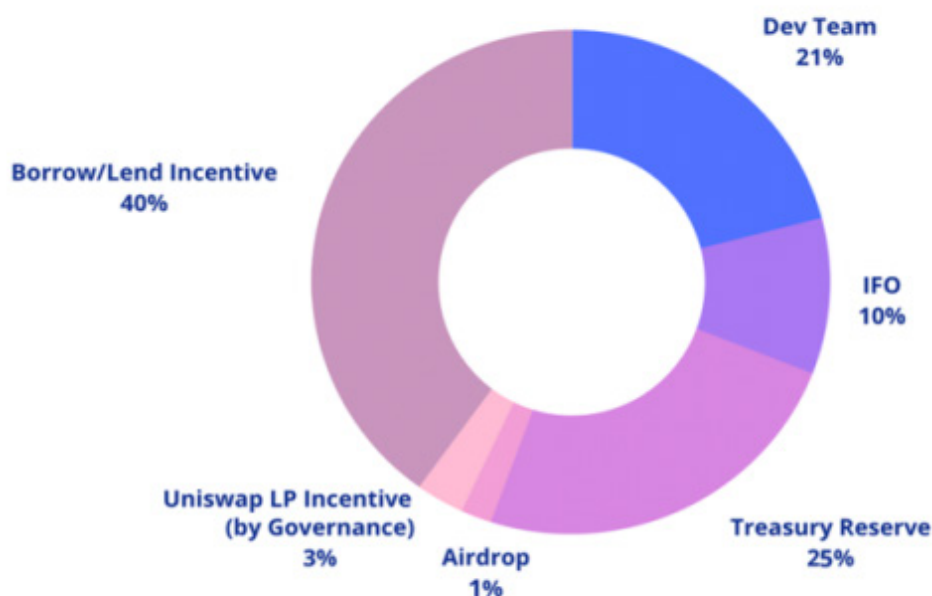


Figure: BEND Token Allocation

Source: BendDAO

It is worth mentioning that the airdropped tokens were not entirely claimed i by the deadline, and the remaining tokens was be transferred to the treasury according to the community governance, so the current treasury reserves account for 25% of the total circulation.



Source: Charted by Mint Ventures

Figure: BEND Token Allocation (adjusted for remaining unallocated portion of Airdrop)

Source: BendDAO, Mint Ventures

7.3.5 Vesting Schedule and Circulation

Most \$BEND tokens go to circulation without a lock-up period after IFO.

- IFO: Users can lock their \$BEND for any duration from 1 week to 4 years at IFO;
- Airdrop: BendDAO airdropped tokens to some target users directly go into circulation, but only 11% of the airdropped tokens was claimed by the deadline. The remaining tokens was transferred to the treasury.

- Rewards: After the mainnet launch in late March 2022, the reward tokens would be vested linearly for 5 years.
- Developer Team: The tokens for the developer team will be locked for 1 year and start vesting for 3 years.
- Treasury Reserves: Community governance voting is required to determine the use of this part of the token. As of the publication of this research report, the treasury has allocated part of the funds to the bug bounty reward and the builders of the Dune Analytics data analysis dashboard through community governance.
- Uniswap LP rewards: The DAO governance voted to supply 273,972.60 \$BEND tokens as liquidity mining rewards per week starting April 27, 2022.

As of October 2022, about 1.5 billion \$BEND was in circulation, accounting for about 15% of the total issuance (the unused treasury reserves are locked). One year after the IFO event, the amount in circulation has increased by nearly 74%, and reached 20% of the total amount . It is expected that all tokens will be supplied in 5 years.

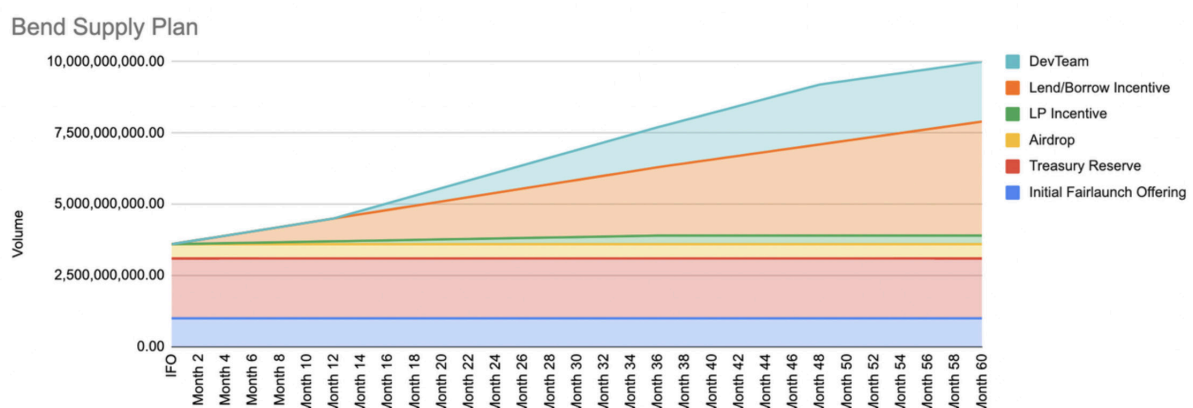
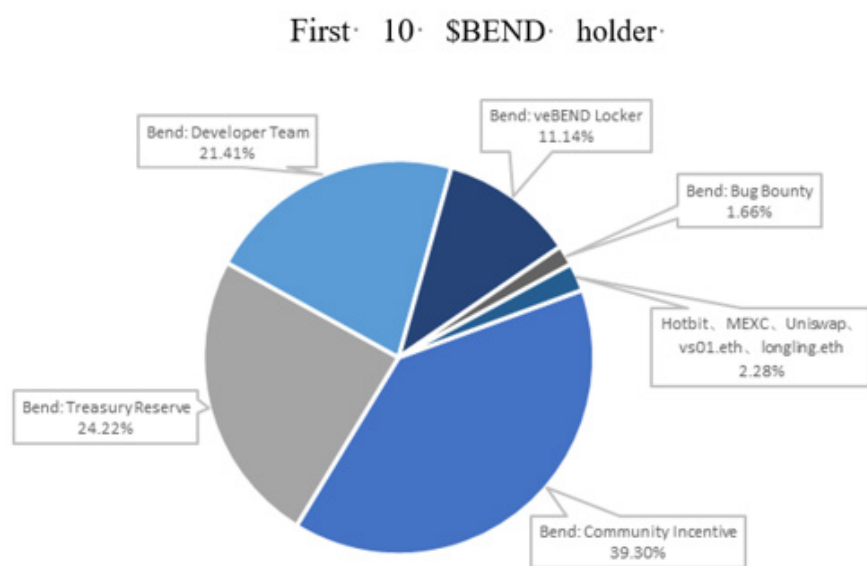


Figure: BEND Token Vesting Schedule

Source: BendDAO

7.3.6 Current Token Distribution

According to the Dune Analytics data dashboard, as of November 6, 2022, we found that all \$BEND tokens (including uncirculated) are currently mainly concentrated in the BendDAO community reward wallet, treasury reserve wallet, developer team, and veBEND locking wallet address. The rest of the top 10 BEND token addresses also include Bug Bounty Pool, Uniswap V2 Liquidity Pool, Hotbit Exchange Wallet, MEXC Exchange Wallet, Longling.eth with a large collection of NFTs, and an individual investor wallet address.



Source: Dune Analytics (@cgq0123), compiled by Mint Ventures

Figure: Top 10 \$BEND Holder Addresses

Source: Dune Analytics (@cgq0123), compiled by Mint Ventures

Among them, most of the tokens in the BendDAO community reward wallet, treasury reserve wallet, developer team, and Bug Bounty pool are slowly vesting or completely locked, accounting for about 96% of the total tokens of BEND. Currently, the overall selling pressure of BEND tokens is relatively small. The developer team tokens are expected to be vesting linearly for 3 years starting from March 2023. According to the vesting schedule, the monthly release amount of developer team tokens (if released on a monthly basis) will account for about 3% of the circulation at that time.

In the tokenomics, veBEND holders share 100% of the protocol revenue and have voting rights. Users lock \$BEND tokens to get veBEND. 72% of the 1.5 billion circulating tokens are locked in the veBEND locking wallet address, and the number of lock-up tokens also increased with the vesting of BEND tokens. It can be seen that token holders have confidence in the future of BendDAO. During the liquidity crisis in late August this year, the amount of lock-up \$BEND tokens increased significantly for a larger portion of protocol revenue.

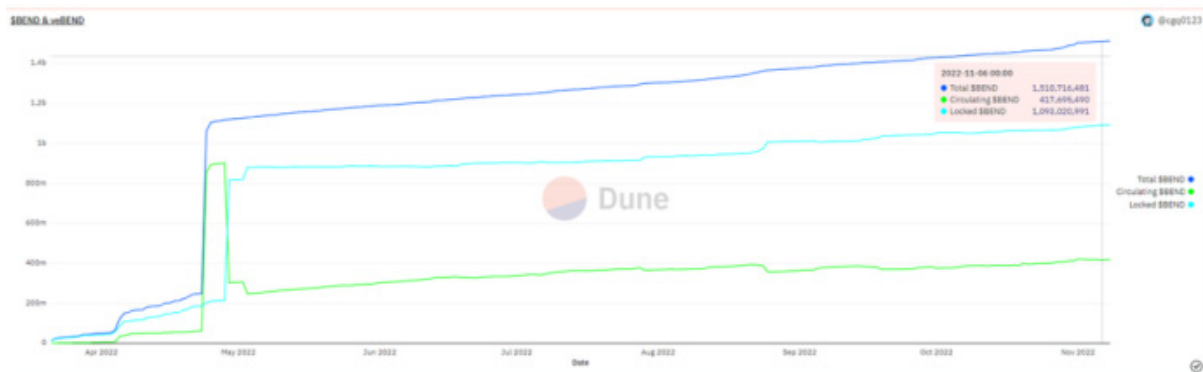


Figure: \$BEND in Circulation and Locked-up \$BEND

Source: Dune Analytics (@cgq0123), compiled by Mint Ventures

7.4 Project Risks

BendDAO's risks are mainly composed of blue-chip NFT risks, competitive challenges, user centralization, liquidation mechanism risks, risks of parameter model and risks of red-flagged NFTs.

7.4.1 Blue-chip NFT risks

BendDAO's success highly relies on the NFT collateral assets. In the worst case, the liquidity of the ETH fund pool dries up, and many borrowers default on their loans. This situation has been similar to the previous liquidity crisis, but there has been

no vicious event of large amounts of default. The protocol is highly dependent on the quality and quantity of blue-chip NFT collateral assets. In terms of quality, the collapse of any blue-chip PFP project will directly lead to a lot of defaults which would turn into non-performing assets if no one comes to bid in the auction market. When the floor price of blue-chip PFP drops sharply (or almost returns to zero), borrowers can default. In terms of quantity, the number of blue-chip collaterals is an important parameter to indicate the vitality of the protocol. Under normal circumstances, the quality of collateral assets is good, but when extreme events occur, BendDAO, which is highly dependent on blue-chip projects, will face greater challenges.

The market capitalization of the current blue-chip NFTs is limited, and the emergence of new blue-chip NFTs is unpredictable. Another risk associated with blue-chip NFTs is that although BendDAO focuses on serving the biggest share of the blue-chip NFT market, the number of blue-chip collections is limited. The 8 types of NFTs that have been supported by the protocol so far are the majority of the entire blue-chip market. During the current bear market, the expansion speed of the blue-chip NFT market has not been as fast as in the second half of 2021. At present, the number of blue-chip PFPs is limited, which means that the total addressing market for BendDAO is restricted. Even if the competition situation does not deteriorate in the short term, BendDAO has to expand through innovative functions and new features. The ceiling of the blue-chip NFT market may be another challenge to BendDAO.

7.4.2 Intensified Competition

NFT-Fi protocols are emerging one after another, and the competition in the NFT lending segment is becoming increasingly fierce. We see the trend of differentiated competition in NFT lending protocols as different players provide their own resolution to NFT liquidity, Peer-to-Peer lending, Peer-to-Pool lending, hybrid lending mechanism, and centralized lending, etc. For example, the recently launched hybrid lending protocol Sodium has attracted the attention of many NFT users. JPEG'd and

other lending protocols are constantly updating products. Recently, JPEG'd added pETH lending options for users, and increased staking rewards to attract more users. With a growing number of users and NFT-Fi players, BendDAO will face more intense competition in the future.

7.4.3 Limited Customer

The user concentration puts pressure on business growth. As of November 7, 2022, the TVL of the BendDAO is 71,509.95 ETH, the total loan amount is 14,686 ETH, and the cumulative loan amount is 73,621 ETH. However, the famous NFT flipper, Franklinisbored has taken out about 21% of the accumulated loan amount, while the loan amount of most other individual users only accounts for about 2%. As a professional NFT user, Franklinisbored has provided BendDAO with a lot of business, but NFT flippers or pro traders are still a minority in the market. If competition intensifies in the NFT lending segments, other lending protocols will pose pressures on BendDAO's business growth as the blue-chip NFT market has been paused on growing for some time.

Bend Borrower Analysis
Current \pm Borrowed is net of Interest Repayment

Borrower	Current \pm Borrowed	\pm Borrowed to Date	Portfolio	Last Borrow (UTC +0)
franklinisbored.eth	109.41	18,653.81	Debank	2022-11-04 23:42
xinchizhu.eth	121.77	1,777.96	Debank	2022-09-25 07:24
stephytao.eth	173.04	1,623.63	Debank	2022-10-09 05:35
\x07e...8452	113.52	1,228.55	Debank	2022-11-02 03:02
\x86b...6160	336.28	1,115.83	Debank	2022-09-30 11:46
\x173...67fd	318.79	932.88	Debank	2022-09-26 04:13
christian2022.eth	[Repaid]	892.89	Debank	2022-10-15 06:49
fluids.eth	[Repaid]	879.47	Debank	2022-07-12 19:26
aheli.eth	[Repaid]	799.85	Debank	2022-06-06 17:13
\x31e...6249	64.98	776.49	Debank	2022-11-06 14:11
hugosu.eth	588.59	649.6	Debank	2022-09-06 16:02
\x83b...22b1	[Repaid]	637.78	Debank	2022-09-22 10:00
bigpiece.eth	315.98	609.3	Debank	2022-04-25 08:53
\x932...0858	552.83	589.12	Debank	2022-05-31 17:02
\x10e...f688	107.48	584.55	Debank	2022-10-20 05:46

1,194 rows Search... Page 1

Figure: Total Borrowing Value Leaderboard

Source: Dune Analytics (@cgq0123)

7.4.4 Liquidation Mechanism Risks

BendDAO's liquidation mechanism has been a module that users have always been discussing. During the previous liquidity crises, due to the downturn of the NFT market, many collaterals triggered the liquidation process, but no one participated in the auction, which led to the accumulation of more "bad debts" or "non-performing assets" in the protocol. The good thing is, the DAO community passed proposals to adjust parameters to resolve. The increase in lending interest rates stimulated deposits. Lenders actively repaid loans when their collaterals were in liquidation. The rule that the bid price must be greater than 95% of the floor price was removed, which greatly encouraged NFT flippers to participate in the auction.

In essence, the liquidation mechanism transfers risks from the protocol to bidders, and the protocol takes more non-performing asset risks when there are no bidders. In order to avoid a liquidity crisis brought by non-performing assets ("NFA") in case of market downturn, community members proposed to establish a "Non-performing asset investment fund" under the DAO treasury to purchase collaterals with health factor less than 0.8 at 20% discount, and then sell them for profit. The proposal essentially transfers the NPA risks from the protocol to the treasury sub-fund, which takes on the responsibility of last resort when the auction mechanism fails. Currently, the proposal is under discussion, and remains to be seen after approval.

About mid November 2022, a decline in blue-chip NFT floor prices triggered liquidation on many BAYC collaterals, which attracted a number of NFT Flippers to buy the dip at BendDAO. Liquidation happens from time to time but what's different this time is that the gap between the floor price and total debt was larger than prior times (as is shown below, the floor price and the latest bid for BAYC collateral being auctioned has a wide gap), which allowed NFT flippers to list the NFT purchased from the auction pool at a rather lower price than the major markets and drag down the NFT floor prices further. This led to a higher risk in blue-chip NFTs, which aroused much discussion on the Internet.

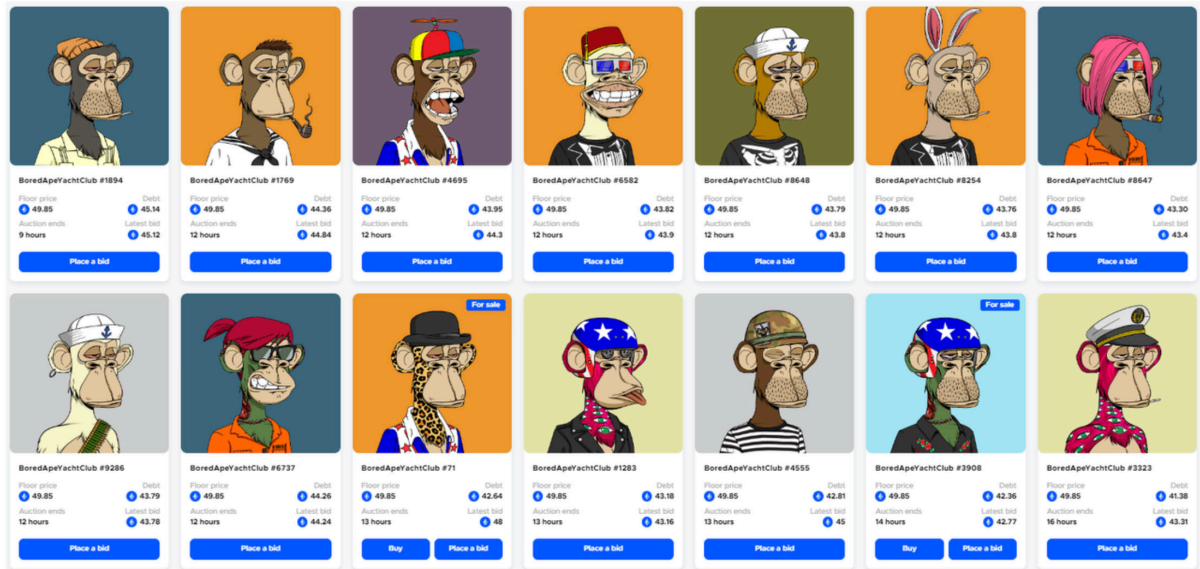


Figure: Screenshot of BendDAO Liquidation Auction page (Nov 15, 2022)

Source: BendDAO

7.4.5 Protocol Risks

Parameter risks

Unlike other DeFi lending protocols, BendDAO and other NFT protocols didn't have a third-party risk assessment in addition to the smart contract audit. The risk management and the initial parameter setup entirely relies on BendDAO's internal stress testing of the parameters as only a few consulting services are available for NFT protocols and it hasn't been a norm for products to do an outside risk assessment.

After the liquidity crisis in August 2022, the BendDAO community initiated a proposal to modify some key parameters including the liquidation threshold, auction duration, and interest rate curve. The modification helped unclog pending liquidating NFTs and ease the FUD sentiment, and made NFT liquidation more likely to occur. Yet, the

shortened auction time caused some of the users to miss the repayment window, and their NFT collateral assets were eventually sold. Furthermore, the change of parameters has a significant impact on the protocol experience. BendDAO team set the parameters based on an internal model, while Aave, Compound and other DeFi lending protocols normally have a third-party risk assessment to help manage the parameter risk and make adjustment suggestions. . Therefore, BendDAO's parameter model is a "black box" for users and veBend holders who participate in voting parameter modification proposals. It is difficult for them to evaluate the robustness of the risk model, and they can only vote from the perspective of users.

Nevertheless, third-party services are beginning to provide risk modeling for NFT-associated protocols. According to the forum information, the BendDAO team and the Cenit Finance team have started to communicate with each other in related aspects.

Red-flagged Collaterals

BendDAO keeps an open attitude towards stolen NFTs as collateral, allowing its current holders (the hacker or) to borrow money against the stolen NFTs. In a liquidation auction, these assets will not be marked as stolen. On one hand, NFTs buyers who accidentally bought these stolen assets received NFTs with damaged value which results in difficulties in selling them again. On the other hand, the stolen assets may cause the accumulation of Non-Performing Assets on the auction market, if no one bids for stolen NFTs at any time. Although there is a proposal to establish a non-performing asset investment fund, which would buy NFTs at a discount under certain conditions and then sell them at a proper time, the proposal acts as a temporary "absorption" of protocol non-performing assets at a discount, essentially leaving the treasury with the losses. If the fund can sell the NFTs when the market turns positive, it can transform the non-performing assets to profits. However, if the market is depressed for a long time, the treasury bears the loss of non-performing assets, and the protocol has to be the last home to the NFTs with little value. We kindly remind BendDAO users pay attention to relevant risks.

8.Valuation

We value BendDAO by using Relative Valuation approach, and we compared with leading DeFi lending protocols including Aave, Compound, and NFT lending protocols including Drops, JPEG'd. We compare different players in the DeFi and NFT lending space with a variety of multiples, including P/F ratio (market cap/protocol fees), P/S ratio (market cap/protocol revenue), P/TVL ratio (market cap/total lockup value) and P/Loan Value ratio (market cap/loan amount). Due to insufficient data availability, JPEG'd and Drops are not compared on the total fee and protocol revenue dimensions.

Based on the above multipliers, BendDAO is in a lower valuation range, partly because the protocol is at an early stage of development, and the NFT-Fi sector has an overall low valuation level. In the future, chances are that more start-up projects, new users and TradFi capital flow into the NFT market, providing a strong unrevealed momentum for the market. Meanwhile, NFT has more application scenarios and has become the value carrier of more assets. Only if NFT assets continue to expand their category, impact and market value can NFT-Fi maintain long-term growth, and the protocol value of BendDAO be further discovered.

	AAVE	Compound	JPEG'd	Drops	BendDAO
Market Cap	\$1.23 Bn	\$346.09 MM	\$13.89 MM	\$3.12 MM	\$2.34 MM
Total Fee	224349565.65	113819225.17	-	-	3323440.38
Protocol Revenue	24595104.31	13152872.77	-	-	1004075.65
TVL	5443405626.30	2150905537.49	14320000.00	1516196.00	93170000.00
Loan Value	2497013309.54	749294960.02	7972016.03	429270.00	23497600.00
P/F	5.50	3.04	-	-	0.70
P/S	50.16	26.31	-	-	2.33
P/TVL	0.23	0.16	0.97	2.06	0.03
P/Loan Value	0.49	0.46	1.74	7.26	0.10

November 7, 2022

Source: CoinGecko, TokenTerminal, JPEG'd, Drops, BendDAO, Mint Ventures

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