Revised Risk Assessment of cvxFXS FiRM Market (August '23)

TL;DR

Market	Total Asset Score	Collateral Factor	Liquidation Factor	Supply Ceiling	Daily Borrow Limit
cvxFXS	4.59	50%	50%	5,000,000	**500,000**

The RWG approves a **Daily Borrow Limit** increase for the cvxFXS market, from 200,000 to 500,000 DOLA. We recommend all other market parameters to remain the same. See *cvxFXS Market* section for more information.

Background

The cvxFXS market is FiRM's 4th most utilized market, with $1.7M in deposits and $482k in borrows, and ranked 3rd market in unique open positions, 7. cvxFXS FiRM users also have, on average, a borrow limit % of 57.03% (see screenshot below), signaling confidence in the asset and appetite to borrow. Since its inception, the cvxFXS market has yet to undergo a parameter adjustment via governance proposal. This approach allows the Risk Working Group to propose periodic parameter adjustments to existing markets based on a variety of factors including utilization of the market, changes in risk profile of the underlying asset, etc. Proposed changes might include adjustments in collateral factors, daily borrow limits, liquidation factors, and market supply ceilings and are made to attract new users whilst still maintaining stability and security of the platform.

Market	Borrower	Deposits	Max Debt	Debt ⌄	In Shortfall?	Seizable	Borrow Limit
✕ cvxFXS	✕				✕		
cvxFXS	c2tp.eth	250.00k ($1.42M)	710.64k	395.00k	No	–	55.58%
cvxFXS	0×1E0c...68f9	23.80k ($135.28k)	67.64k	43.22k	No	–	63.90%
cvxFXS	0×8061...4093	8.97k ($51.01k)	25.51k	17.50k	No	–	68.61%
cvxFXS	0xdD84...5a2B	7.70k ($43.76k)	21.88k	12.10k	No	–	55.31%
cvxFXS	0×85F4...5D6E	6.15k ($34.95k)	17.47k	11.64k	No	–	66.60%
cvxFXS	0xeBe2...4Cf7	1.89k ($10.73k)	5.37k	2.50k	No	–	46.58%
cvxFXS	0xC4Dd...26F9	209.48 ($1.19k)	595.46	425.00	No	–	71.37%

Methodologies

Asset Scoring Model

The Analytics Working Group, in close collaboration with the Risk Working Group, has devised a comprehensive, in-house [asset scoring model](). This framework evaluates the relative "risk" of any asset, using wETH as a benchmark, by considering six essential factors:

- market capitalization,
- trading volume,
- price volatility,
- token distribution,
- project fundamentals; and
- token utility.

We derive the Total Asset Score (TAS) by using the following formula :

$$TAS = 0.2 * (MCS + PFS + TUS) + 0.15 * (TVS + PVS + TDS) + 0.1 * PFS$$

Where:
- MCS : Market Capitalization Score

$$MCS = min(10, (Token\ Supply\ *\ Token\ Price\ *\ 200)/(wETH\ Supply\ *\ wETH\ price)\ *\ 10)$$

- TVS : Trading Volume Score

$$TVS = min(10, (30\ Day\ Avg\ Token\ Trading\ Volume\ /\ 30\ Day\ Avg\ wETH\ Trading\ Volume)\ *\ 10)$$

- PVS : Price Volatility Score

$$PVS = min(10, 10 - (Token\ Log\ Price\ Volatility\ /\ wETH\ Log\ Price\ Volatility)\ *\ 9)$$

- TDS : Token Distribution Score

$$TDS = min((1 - Token\ Gini\ Index)\ *\ 10\ /\ (1 - wETH\ Gini\ Index); 10)$$

- PFS : Project Fundamentals Score

Subjective evaluation (1-10) based on team experience, technology, and roadmap
- TUS : Token Utility Score

Subjective evaluation (1-10) based on token use cases and functionality

The weights were determined based on the relative importance of each factor in evaluating token risk. As we build out a registry of TAS for a variety of collateral options and match them with findings from other risk profiling frameworks and methodologies, the RWG will be able to rely more and more on the Asset Scoring Model.

RWG Risk Assessments

Risk Assessments conducted by the Risk Working Group (RWG) serve to identify, evaluate, and prioritize risks associated with a specific entity, protocol, collateral, or initiative. The purpose of these assessments is to provide a comprehensive and objective analysis of potential risks and their potential impact on Inverse Finance. This information can then be used to inform risk management strategies and decision-making processes, helping to mitigate or minimize the identified risks. Past assessments include:

- 📄 cvxFXS Collateral on FiRM

Parameter Recommendations

Parameter recommendations for new markets and changes to existing markets on FiRM are the end result of RWG Risk Assessments and include suggested values for various risk parameters such as the supply ceiling, the collateral factor, daily borrow limit, the liquidation factor, etc. These recommendations serve as a starting point for an informed conversation amongst core contributors and community members alike of Inverse Finance DAO. By providing clear parameter recommendations, the RWG helps to ensure that new markets added to the FiRM protocol are appropriately risk-managed and able to operate in a safe and sustainable manner. This helps to protect the protocol and its users from potential losses and enables the protocol to continue to provide innovative and valuable fixed-rate lending services to the DeFi community.

cvxFXS Market

Asset Scoring Model

August 30th, 2023: The RWG evaluated cvxFXS making use of our in-house comprehensive asset scoring model. The TAS came out to be 4.59, an 0.19 increase from when cvxFXS was last assessed on May 30th, 2023. A breakdown of the Total Asset Score (TAS) follows:

Component	Link/Rationale	Score
Market Capitalization	MCS=min(10, (cvxFXS Supply * cvxFXS Price * 200) /(wETH Supply * wETH price)	1.52
DEX Trading Volume	TVS =min(10, (30 Day Avg Token Trading Volume * 200 / 30 Day Avg wETH Trading Volume)	0.72
Price Volatility	PVS =min(10, 10 - (Token Log Price Volatility / wETH Log Price Volatility) * 9)	3.79
Token Distribution	Token Distribution Score = min((1- Token Gini Index) * 10 / (1 - wETH Gini Index);10)	2.28
Project Fundamentals	📄 cvxFXS Collateral on FiRM - See Protocol Analysis, and Audits & Bug Bounties Sections	6.92
Token Utility	📄 cvxFXS Collateral on FiRM - See Collateral Analysis Section	10
Total Asset Score		

$$TAS = 1.52 * 0.2 + 0.72 * 0.15 + 3.79 * 0.15 + 2.28 * 0.1 + 6.92 * 0.2 + 10 * 0.2$$

$$TAS = 4.59/10$$

cvxFXS scores poorly in *DEX Trading Volume* and *Market Capitalization, Price Volatility, and Token Distribution.* From this we can draw the following conclusions:

1. **Price Volatility**: A low score in price volatility suggests that cvxFXS price experiences significant fluctuations or instability compared to the benchmark (wETH). This volatility indicates a higher level of risk associated with cvxFXS's price movements.
2. **Market Capitalization**: A low score in market capitalization suggests that cvxFXS has a small overall market value relative to wETH. A lesser market capitalization indicates that cvxFXS has yet to attain a considerable level of adoption or popularity.
3. **Trading Volume**: A low score in trading volume indicates that cvxFXS experiences minimal levels of trading activity compared to wETH. Lower trading volume generally implies poor liquidity and market interest, making it harder for investors to buy or sell cvxFXS without significant price impact or slippage. This is also important in the context of liquidations. cvxFXS's Trading Volume score will be further explored in the *Slippage/Price Impact Sims* section below.
4. **Token Distribution**: A poor score in token distribution suggests that cvxFXS tokens may be concentrated among a few holders or addresses. This concentration raises concerns about the asset's decentralization, potential market manipulation risks, and limited liquidity. In our instance, given our close relationship with C2TP, founder of Convex, this is less of a concern. cvxFXS's Token Distribution score will be further explored in the *Holders* section below.

Holders

cvxFXS Contract Address:
https://etherscan.io/token/0xfeef77d3f69374f66429c91d732a244f074bdf74#balances

The address listed at #1 in the table presented above is the staked cvxFXS address. Top holders can be seen here -
https://etherscan.io/token/0x49b4d1df40442f0c31b1bbaea3ede7c38e37e31a#balances

#2, #3, and #5 are Curve liquidity pools. Addresses of stakers on Convex for Pools #2, and #3 can be accessed here - ⊠ cvxFXS/FXS_ Old + New_ LP_Stakers_Convex.xlsx . The table below along with the pie chart shows a healthy distribution of addresses.

Top 3 Addresses (%)	16.95%
Top 10 Addresses (%)	37.49%
Top 50 Addresses (%)	77.20%
# Addresses above 100,000	5
# Addresses above 50,000	8
# Addresses above 10,000	55
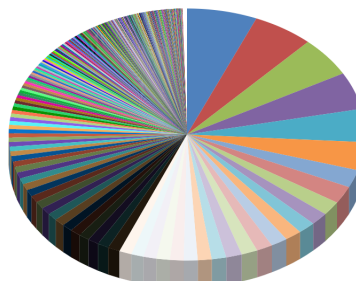
Slippage/Price Impact Sims

Liquidity is available for liquidators on Curve in the form of three pools; cvxFXS/FXS ($10.23M TVL, address #2 above), cvxFXS/FXS ($9.38M TVL, address #3 above), and cvxFXS FraxBP and ($1.84M, address #5 above).

TVL and FXS-backing in the two deepest LPs declining rapidly in the immediate aftermath of the Curve exploit on August 1st, 2023, resulting in a cvxFXS depeg. The TVL and consequently the peg has since recovered from then, reading 0.98 as of August 30th, 2023. Cumulatively, TVL is down 53% (from $45.91M to $21.45M) since when the RWG conducted its first risk assessment on cvxFXS in May 2023. Despite this decline, slippage figures are still well within acceptable means to operate the market on FiRM, as shown below.

Trade	cvxFXS	FXS	USDC	DOLA	Slippage
$100,000	17574	17104	99344	99658	-0.34%
$200,000	35149	34173	198174	198755	-0.62%
$400,000	70298	68257	390556	391626	-2.09%
$600,000	105448	102315	582049	583580	-2.74%
$800,000	140597	136334	771235	773186	-3.35%
$1,000,000	175746	170302	957795	960126	-3.99%
$2,000,000	351493	339384	1855709	1859416	-7.03%

Parameter Recommendations

Based on the findings of our research presented above, we approve the request to increase the daily borrow limit for the cvxFXS market from 200,000 DOLA to 500,000 DOLA. Market activity suggests there is an appetite for the market at current collateral factor value, and average borrow limit figures suggest cvxFXS holders are cautious with their capital.
The present day liquidity picture is sufficient but is also propped up by few liquidity providers. If one or more were to remove their funds from the Curve pools, the situation could deteriorate rapidly. Because of this, we recommend no changes be made to any other market parameter, and that any further increase in market parameters be carefully evaluated. Were the liquidity situation to worsen, RWG will push the Fed Chair to remove all remaining DOLA liquidity in the market at the time to secure it.

Regular monitoring of market dynamics, liquidity, and price stability is essential to identify any emerging risks or potential disruptions. Ongoing surveillance and analysis will allow prompt actions to address any issues that may arise. Periodic stress testing of the market under different scenarios should be conducted to assess the resilience of the system and evaluate the impact of increased borrowing activities. Stress testing helps identify vulnerabilities and potential risks that may not be evident in normal market conditions.

Please note that this document serves as a risk assessment and does not constitute final decisions or policy changes. The recommendations should be reviewed and approved by the appropriate stakeholders before implementation.