

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

TL;DR

Market	Total Asset Score	Collateral Factor	Liquidation Factor	Liquidation Incentive	Supply Ceiling	Daily Borrow Limit	Minimum Debt Amount
cvxFXS	4.49	65%	37.1%	10%	5,000,000	300,000	3000

The RWG approves a **Collateral Factor** increase for the cvxFXS market, from 50% to 65%. We also recommend the daily borrow limit be reduced to 300,000 DOLA. All other market parameters should remain the same. See *cvxFXS Market* section for more information.

Background

The purpose of this assessment is to evaluate whether it is reasonable, from a risk perspective, to enhance key market parameters for FiRM's cvxFXS market.

Market	Borrower	Deposits	Max Debt	Debt	In Shortfall?	Seizable	Borrow Limit
cvxFXS	0x1E0c...68f9	23.80k (\$187.55k)	93.78k	43.22k	No	-	46.09%
cvxFXS	0x8061...4093	9.36k (\$73.74k)	36.87k	20.10k	No	-	54.52%
cvxFXS	0x85F4...5D6E	6.15k (\$48.45k)	24.23k	13.94k	No	-	57.53%
cvxFXS	0xeBe2...4Cf7	2.02k (\$15.89k)	7.95k	2.50k	No	-	31.46%

The cvxFXS market is FiRM's 7th most utilized market, with \$325k in deposits and \$80k in borrows. cvxFXS FiRM users also have, on average, a borrow limit % of 49.76% (see screenshot above), signaling prudence.



Market usage has decreased since its highs between August and October. Since the last RWG assessment, borrows have decreased from \$482k to \$80k, and unique positions from 7 to 4. Since its inception, the cvxFXS market has undergone a parameter adjustment (daily borrow

limit increase) 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.

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](#)
- [Revised Risk Assessment of cvxFXS FiRM Market \(August '23\)](#)

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

December 13th, 2023: The RWG evaluated cvxFXS making use of our in-house comprehensive [asset scoring model](#). The TAS came out to be 4.49. Past Scores include:

- 4.59 on August 30th, 2023
- 4.40 on May 30th, 2023

A breakdown of the Total Asset Score (TAS) follows:

Component	Link/Rationale	Score
Market Capitalization	$MCS = \min(10, (cvxFXS \text{ Supply} * cvxFXS \text{ Price} * 200) / (wETH \text{ Supply} * wETH \text{ price}))$	1.74
DEX Trading Volume	$TVS = \min(10, (30 \text{ Day Avg Token Trading Volume} * 200 / 30 \text{ Day Avg wETH Trading Volume}))$	0.44
Price Volatility	$PVS = \min(10, 10 - (\text{Token Log Price Volatility} / wETH \text{ Log Price Volatility}) * 9)$	3.06
Token Distribution	Token Distribution Score = $\min((1 - \text{Token Gini Index}) * 10 / (1 - wETH \text{ Gini Index}); 10)$	2.29
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		
$TAS = 1.74 * 0.2 + 0.44 * 0.15 + 3.06 * 0.15 + 2.29 * 0.1 + 6.92 * 0.2 + 10 * 0.2$		
$TAS = 4.49 / 10$		

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* and *Liquidity* sections below.

Holders

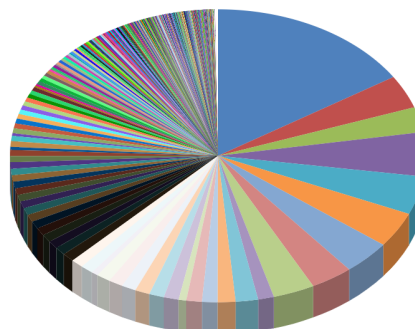
cvxFXS Contract Address:

<https://etherscan.io/token/0xfeef77d3f69374f66429c91d732a244f074bdf74#balances>

Token Holders Chart				
Top 1,000 holders (From a total of 4,639 holders)				
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Rank	Address	Quantity	Percentage	Analytics
1	0x49b4d1...8e37E31a	4,005,479.440823360421696835	54.5614%	Analytics
2	0x6a9014...585636D0	2,392,202.648900099157857074	32.5859%	Analytics
3	0xd658A3...22b5d94A	703,077.282356768580887381	9.5771%	Analytics
4	0x21d158...8D6c6267	81,297.932051771939194522	1.1074%	Analytics
5	0xbB2Ca7...091b4d7B	26,693.347767569483403807	0.3636%	Analytics
6	0xB43Fb3...8eE3a019	12,596.466544563705675017	0.1716%	Analytics
7	0x03221A...74855Ef5	8,144.40378068	0.1109%	Analytics
8	0x72a193...e32db86E	7,263.95807344797578659	0.0989%	Analytics
9	0xA97420...214ea497	5,935.676901774622620738	0.0809%	Analytics
10	0x549735...91eebdd2	5,571.076897390654002516	0.0759%	Analytics

#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.

LP Token Value (Old) (\$)	17.1381
LP Token Value (New) (\$)	8.4156
Total TVL	32668659.77
Top 3 Addresses (%)	25.29%
Top 10 Addresses (%)	47.74%
Top 50 Addresses (%)	78.18%
# Addresses above \$100,000	61
# Addresses above \$50,000	82
# Addresses above \$10,000	219



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>

Transfers

Holders

Info

Contract

Analytics

Comments

Token Holders Chart

A total of 357 token holders

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Last

Rank	Address	Quantity	Percentage	Analytics
1	<div><div><div>c2tp.eth</div></div></div>	663,995.497725385864894509	16.5772%	<div></div>
2	<div><div><div>0x110A88...a4FB70de</div></div></div>	541,924.065444205965072537	13.5296%	<div></div>
3	<div><div><div>0x13C9D9...8478Cb03</div></div></div>	235,732.607201573908446598	5.8853%	<div></div>
4	<div><div><div>0x3e349b...c478FEA4</div></div></div>	225,011.178545255550796744	5.6176%	<div></div>
5	<div><div><div>0xD5BB24...B41B9c0a</div></div></div>	188,463.308489469010871367	4.7051%	<div></div>
6	<div><div><div>0x346F1d...dA2Dc0d9</div></div></div>	187,586.527781014384697888	4.6832%	<div></div>
7	<div><div><div>fraximaxi.eth</div></div></div>	170,244.539058880173655295	4.2503%	<div></div>
8	<div><div><div>0x7A8EDc...A621E823</div></div></div>	119,050.813642030576127153	2.9722%	<div></div>
9	<div><div><div>0xe84579...f4a0f3d0</div></div></div>	100,608.322685134470529988	2.5118%	<div></div>
10	<div><div><div>0x905c1c...A93F3b17</div></div></div>	91,000.003555605133379599	2.2719%	<div></div>

Slippage/Price Impact Sims

Liquidity is available for liquidators on Curve in the form of three pools;

- cvxFXS/FXS LP (new): \$23.65M TVL, address #2 from cvxFXS address table above
- cvxFXS/FXS LP (old): \$8.54M TVL, address #3 from the same table
- cvxFXS FraxBP: \$1.29M, address #5 from the same table

TVL and FXS-backing in the two deepest LPs declined rapidly in the immediate aftermath of the Curve exploit on August 1st, 2023, resulting in a cvxFXS depeg. Since then, the TVL and consequently the peg has recovered, reading 0.934 as of December 13th, 2023. Present day TVL and readings from two previous assessments are listed below:

- \$45.91MM - May 2023
- \$21.45MM - August 2023
- \$33.48MM - December 2023

Slippage figures for increasing trade amounts are displayed below. Despite slippage worsening across the board since August, these figures are still well within acceptable means to operate the market on FiRM.

Trade	cvxFXS	FXS	USDC	DOLA	Slippage (Dec '23)	Slippage (Aug '23)
\$100,000	12407	11617	98325	98517	-1.48%	-0.34%
\$200,000	24814	23156	194977	195361	-2.32%	-0.62%
\$400,000	49628	46116	385331	386046	-3.49%	-2.09%
\$600,000	74442	68930	572374	573377	-4.44%	-2.74%
\$800,000	99256	91555	755416	756665	-5.42%	-3.35%
\$1,000,000	124069	113966	934530	935986	-6.40%	-3.99%
\$2,000,000	248139	221705	1767809	1769879	-11.51%	-7.03%

As displayed above, while TVL has deepened since August, slippage and hence price impact has worsened. This could in part be due to cvxFXS peg worsening by 4.7% (from 0.98 in August to 0.934 presently).

Parameter Recommendations

Based on the findings of our research presented above, cvxFXS makes a fine collateral for FiRM. The present day liquidity picture remains sufficiently deep and spread across numerous addresses with large holdings. Therefore, RWG recommends an increase of collateral factor for the cvxFXS market from 50% to 65%. Simultaneously, we recommend the daily borrow limit be reduced from 500,000 to 300,000 DOLA, to match the current risk profile of the asset. Market activity suggests there is an ample room for borrower demand at the current supply ceiling and daily borrow limit. Average borrow limit figures suggest cvxFXS holders are cautious with their capital. We recommend any future increase in these market parameters or new liquidity in the market be carefully evaluated.

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.