Risk Assessment - CVX Collateral Asset on FiRM

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Useful Links

- Coingecko
- Website
- Github
- Blog
- Twitter
- Main Discord
- Bug Bounty
- Docs
- Voting
- Prime Rating Report

TL;DR

1. Token Utility and Integration:
CVX has a significant utility within the Convex Finance ecosystem. This utility extends from staking rewards to governance and locking/yield boosting. The integration into FiRM seems promising because CVX will retain its ability to be staked while being lent out. This unique feature could serve as a major selling point, as it allows users to potentially double-dip in terms of earning returns.

2. Asset Scoring Model Evaluation:

- The token utility score is very high, which indicates that CVX has a substantial use-case within its ecosystem.
- The market capitalization score suggests that CVX is widely accepted and has a significant investor base.
- The project fundamentals score shows the project is built on a solid foundation.
- However, CVX scores low in DEX trading volume and token distribution, suggesting liquidity concerns and possible centralization.

3. Liquidity Analysis:

- Data was collected on all liquidity providers in the Top 3 CVX LPs by TVL which presently accounts for ~$19.14M of the $23.25M in CVX on-chain liquidity (83%). From this we determined the following statistics:
    - # of LPers (> $100) = 393
    - Top 3 Addresses (%) = 46.13%
    - Top 10 Addresses (%) = 66.80%
    - Top 50 Addresses (%) = 88.18%
    - # Addresses above $100,000 = 22
    - # Addresses above $50,000 = 43
    - # Addresses above $10,000 = 128
- Data reinforces concerns first brought up by Asset Scoring Model.

4. Parameter Recommendations:

- The RWG suggested parameters for CVX's integration into FiRM are conservative, which is a prudent approach for a new integration. This allows for monitoring the asset's behavior under these parameters before considering any adjustments.The conservative nature of these parameters reflects caution due to CVX's liquidity concerns.
- Jump to Parameter Recommendations Section Here.

5. Risks & Considerations:

- Token distribution indicates a possible concentration of tokens among a few holders. This could lead to centralization risks where a few holders have a disproportionate influence over the token's direction or price.
- DEX trading volume suggests there might be challenges in terms of liquidity, potentially leading to slippage or price impacts during substantial trades.

6. Conclusion & Recommendations:

- The integration of CVX into FiRM holds promise, especially given the unique feature allowing staking while lending.
- Periodic monitoring and stress testing are crucial, given some of the identified risks. These will help in ensuring that any emerging challenges are addressed promptly.
- The RWG's approach of recommending conservative parameters initially is sensible, allowing time for observation and understanding of CVX's behavior on FiRM.

Background

With Convex Finance's CVX, there lies a unique and lucrative opportunity for our fixed-rate lending protocol. Compared to our competition, we have an edge that sets us apart – our Personal Collateral Escrows (PCE) feature that allows CVX to be staked while lent out. As of September 11th, 2023, $138.5M $CVX is staked. This particular feature has the potential to generate an additional yield for borrowers, a significant incentive that is not currently offered by any other protocol. This could catalyze the interest of potential borrowers looking to maximize their yield, presenting a strong case for choosing FiRM.

On Convex Finance, a 17% fee (there is a proposal to adjust this up to 20%) is taken from all CRV earned by LPs on Convex (currently $1.76bn of LPs deposited via Convex), of which 4.5% goes to CVX stakers as cvxCRV. Staking CVX has never been too lucrative, with vlCVX lockers having their CVX "staked" as well, significantly diluting the cvxCRV rewards. While we acknowledge that a large portion of users prefer to lock their CVX, we expect this is soon to change. There is currently a proposal live in Convex governance to set vlCVX lockers staking allocation to 0% (formfrom 100%); this will mean that while the total cvxCRV reward amount stays the same, it is completely distributed to stakers. The expectation is that APR for staking CVX will immediately increase to ~85% (at current CVX prices) once this proposal passes.

There's an undeniable market that is drawn to flexibility and the potential for enhanced yield. As evidence of this, we can observe that ~$3.36M is lent out on FraxLend ($6M ATH). The opportunity becomes even more enticing considering our relationship with the Convex/Curve community. With their attention already on FiRM, the integration of CVX into our lending market could very well attract new borrowers from this substantial user base. This synergy could lead to a robust expansion of FiRM, enhancing our footprint in DeFi and offering users a unique way to optimize their yield strategy with CVX.

Protocol Analysis

Org. Structure

- ☐ **Is the Protocol a DAO? How is it governed eg. delegates , snapshot (10)**

Convex Finance was originally formed to act as a proxy for a group of CRV holders that wanted to jointly influence Curve decision-making to improve rewards for Liquidity Pools of their choosing. By pooling together individual users, the protocol provides the users with higher rewards and earning with the only downside being that the users lose their voting rights on Curve. While Convex Finance originally started out with the goal of optimizing and expanding opportunities for users of Curve.fi, the protocol has since evolved to adopt a similar strategy to Frax Finance's $FXS and $FPIS, and, more recently, to Prisma Finance's $PRISMA.

For governance, voting occurs on the Snapshot platform (which is the governance forum) and there are also debates on the discord channel. The governance process is well formalized and documented in the Convex docs under Voting and Gauge Weights.

- ☐ **Does Protocol publish analytics / transparency via Dune or similar? (0)**

No

- ☐ **Working group structure (3)**

Since the team is not clearly identified, working group structure is unclear as well. A single 3 of 5 multisig performs several functions which are outlined here.

- ☐ **Are core contributors compensated / Doxed? (5)**

There is no clear identification of the team neither on the website nor in the documentation. Our DAO has an established working relationship with the Convex Founder, C2tP. Kendrick Llama, Winthrope, and Charlie are also identified on Discord as being part of the team.

- ☐ **Any known controversies in crypto space (10)**

None.

- ☐ **Do they have a security or risk management team (0)**

Unclear for the same reason outlined in working group structure section.

Multisig Structure

- ☐ **Is protocol transparent of multisigs and signers, List/links of multisigs, purpose, and setup x of x (10)**

The admin controls the protocol through the multisig; the multisig has five members two of which are from the convex team. The multisig admin have the following capabilities: update the stash factory and the pool manager, control the arbitrator vault, change platform fees allocated to takers with hard-coded ranges, set up the treasury address and allocate up to 2% of the platform fees back to this address, control the treasury account, vote for proposals and gauge weights, et distribution weights on the master chef, shutdown and/or pause new deposits to pool staking contracts and others, apply a new operator the whitelisted proxy if the current operator is completely shutdown and add and/or remove rewards.

- ☐ **Can multisigs interfere with collateral options? EOA minting (10)**

Admin control information and ownership is documented here. The relevant contracts are clearly identified as immutable. Smart contract change capabilities are well identified for all Convex contracts. Pause control documentation is present.

Influence, Reputation, and Partnerships

- ☐ **How long has the protocol been around , have they endured long bear markets? (8)**

Since its launch mid-May of 2021, the protocol has gained a lot of traction and has amassed a TVL of around $1.78B (ATH > $20B). They are major players in the Curve Wars along with Yearn and StakeDAO. Convex can count on 222,934,188 CRV deposits and 28,642 depositors. The protocol is enduring their first bear market.

- ☐ **Have they been exploited and how was it handled , was value restored to users if affected. (10)**

No previous exploits.

- ☐ **Current and notable past partnerships , are they a net positive on the DEFI space (10)**

Convex holds close ties to Curve, Frax, and Prisma Finance. These ties are beneficial for all projects. Convex Finance is able to offer users higher yields and boosted rewards, which attracts more users to the platform. Curve Finance is able to attract more liquidity, which makes it a more attractive exchange for users. Frax Finance is able to increase its adoption and reach a wider audience.

The ties between Convex Finance, Curve Finance, and Frax Finance are a positive development for the DeFi ecosystem. It shows that the DeFi community is working together to build a more robust and user-friendly ecosystem.

Audits & Bug Bounties

Previous and Ongoing

- [ ] **Audits & Bounties (7)**

Convex was audited once before deployment.

Convex offers a bug bounty of up to $250K.

Reward Payouts

- [ ] **Rewards paid, vulnerabilities found with severity**

One past case, where a non-critical bug was disclosed and a payout issued. Details here.

Collateral Analysis

Oracles

- [ ] **Available Chainlink Oracle**

CVX can count on two Chainlink price feeds, one for the CVX/USD pair and one for CVX/ETH. CVX chainlink feed updates every 24 hours or when there's a 2% price deviation.

- [ ] **Does the asset have a backup oracle**

There is a MA Price built into the LP as well.

- [ ] **Any advanced oracle implementation required**

None

- [ ] **Liquidation Routing, Do liquidations require a wrapper?, accessibility**

CVX>ETH>USDC>DOLA

- [ ] **Peg Risk if any**

N/A

Token Statistics

- [ ] **Contracts, upgradable?**

The relevant contracts are clearly identified as immutable as identified here.

- [ ] **Price / Market Cap / Circulating Supply / Locked Supply / True Circulating / Total / Max**

Coingecko

Price	Market Cap	Circulating Supply
$2.30	$184M	80,372,772

Liquidity

- [ ] **Mainnet Dex Liquidity**

On-chain liquidity currently stands at $23.25M per DeFiLlama, with a yearly high of $70.8M and an all-time high of ~$241M.

LP	Protocol	Liquidity	24 Hour Volume
CVX/ETH	Curve	$13.96MM	$1M
CVX/frxETH	Curve	$4.28MM	$15k
CVX/FraxBP	Curve	$900k	$15k
CVX/wETH	Sushiswap	$484k	$27k
CVX/wETH	Uniswap v2	$228k	$46k

☐ **On-Chain Slippage / Price Impact**

Trade	CVX	ETH	USDC	DOLA	Slippage (%)
$50,000	21740	32.23	49748	49953	-0.09
$100,000	43478	64.01	98801	99205	-0.80
$250,000	108695	156.59	241699	242660	-2.94
$500,000	217391	306.04	472365	474174	-5.17
$1,000,000	434782	574.14	885999	889156	-11.08
$2,000,000	869565	1014.34	1564482	1569427	-21.53
$4,000,000	1739130	1662.45	2561906	2568630	-35.78
$6,000,000	2608695	2120.36	3265384	3272806	-45.45

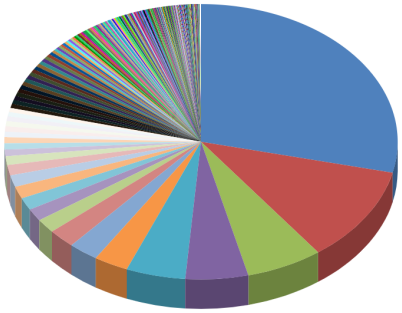
☐ **Token Holders**

Holders: 21,339

Holder or Protocol	**Percent supply**
Convex Finance: CVX Rewards	60.6582%
Convex Finance: Vested Escrow	9.6309%
Convex Finance: Convex Master Chef	8.7288%
0xB57649...40B0E0d4	3.0887%
0x15A5F1...35EFCa39	1.5942%

Liquidity providers in the Top 3 CVX LPs by TVL (all on Curve) which presently accounts for ~$19.14M of the $23.25M in CVX on-chain liquidity (83%), are listed here. From this data we notice the following:

# of LPers (> $100)	393
Top 3 Addresses (%)	46.13%
Top 10 Addresses (%)	66.80%
Top 50 Addresses (%)	88.18%
# Addresses above $100,000	22



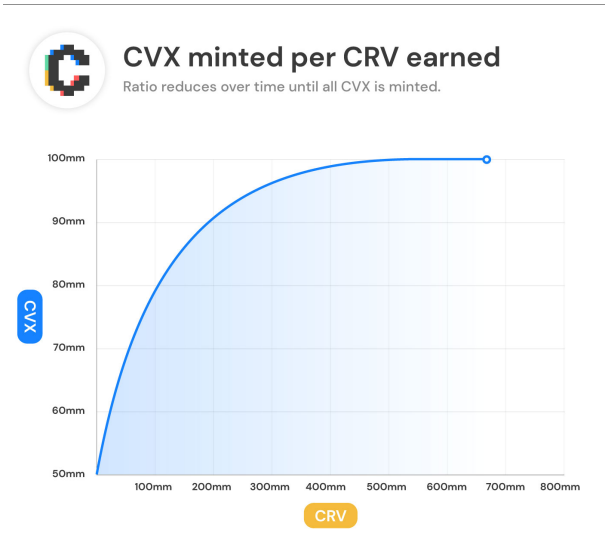
# Addresses above $50,000	43
# Addresses above $10,000	128

Emissions

- ☐ **Emissions Policy, what are emissions used for?**

CVX is minted whenever a user claims CRV.
This means that all LP pools, as well as the cvxCRV rewards pool will mint CVX when claiming CRV rewards from the pool. Take note that CVX pool does not mint more CVX, as rewards received is cvxCRV and not vanilla CRV.

The amount of CVX minted is determined pro-rata for how much CRV was claimed, with the conversion rate decreasing as CVX supply increases (max 100 million) in the form of cliff drop offs.



Distribution

- Max Supply: 100 million
- 50% Curve LP rewards - Rewarded pro-rata for CRV received on Convex
- 25% Liquidity mining - Distributed over 4 years. (Incentive programs, currently CVX/ETH and cvxCRV/CRV)
- 9.7% Treasury -Vested over 1 year. Used for future incentives or other community driven activities
- 1% veCRV holders -Instantly claimable airdrop
- 1% veCRV holders who vote to whitelist Convex - Instantly claimable airdrop
- 3.3% Investors - Vested over 1 year. 100% of investment funds used to pre-seed boost and locked forever(no cvxCRV minted).
- 10% Convex Team - Vested over 1 year

The emission of CVX tokens serves multiple purposes:

- Incentive for Liquidity Providers: The primary use of CVX emissions is to incentivize users to provide liquidity to the Convex platform. By staking their LP tokens, users can earn a yield in the form of CVX tokens.
- Distribution of Governance Rights: As CVX is a governance token, its distribution also serves to decentralize the governance of the Convex platform. By earning and holding CVX, users have the right to participate in decision-making processes for the Convex Finance platform.
- Ecosystem Development: Emissions can also be used to fund grants or other initiatives that contribute to the development and growth of the Convex ecosystem.

Utility & Use Case

- ☐ **Does the Token have utility, Can it retain the utility while supplied to FiRM? (10)**

The CVX token has several important utilities within the Convex Finance ecosystem:

- Staking Rewards: CVX token holders can stake their tokens to earn a proportion of the platform's fee revenue, thus incentivizing token holders to participate actively in the ecosystem.
- Governance: CVX tokens also grant governance rights to the holders. This allows them to vote on proposals affecting the Convex ecosystem, making decisions about the platform's future direction.
- Yield Boosting: CVX stakers also get a boost in their CRV (Curve Finance's token) rewards. By staking CVX, users can increase their yield on Curve LP tokens staked via the Convex platform.

Supplying the CVX token to any lending platform will impact some of these utilities including:

- **Staking Rewards and Yield Boosting**: If the CVX tokens are lent out, they cannot be simultaneously staked to earn rewards or boost yield. Thus, lenders would be giving up potential yield in return for interest on their loan.
- **Governance**: For CVX tokens that are supplied to a lending market, the governance rights would usually transfer to the borrower for the duration of the loan. However, this could depend on how the lending platform is structured and how governance rights are handled.

However this would not be the case on FiRM. See Background section for more.

- ☐ **Liquid or locking feature (10)**

Users can stake their CVX tokens to earn a portion of platform fees and participate in governance. Once staked, these tokens become non-transferable, essentially a "lock-up" while they're staked.

- ☐ **Goal of the token, where is value derived from? (10)**

The goal of the Convex Finance (CVX) token is primarily to facilitate decentralized governance and incentivize participation within the Convex ecosystem. The value of the CVX token is derived from a few key sources:

1. Platform Fees**:** CVX token holders who stake their tokens receive a portion of the platform's fee revenue. This is a direct form of value derived from the operations of the Convex platform.
2. Governance Power: The governance power granted by CVX tokens can be valuable to users who wish to influence the direction of the Convex protocol.
3. Market Demand: As with any token, the value of CVX also relies on market demand. If more users want to use the Convex platform and participate in its governance, demand for CVX tokens can increase, which can drive up the token's price.
4. Scarcity and Tokenomics: The deflationary emission schedule of CVX can contribute to its value over time. As the rate of new token creation slows down, the increasing scarcity of CVX could exert upward pressure on its price, assuming demand remains strong.

Conclusion

In conclusion, the integration of Convex Finance's CVX token into our fixed-rate lending protocol, FiRM, presents an exciting opportunity to expand our services to the Convex community. We believe that the unique ability to stake CVX while it is lent out, thereby earning additional yield, will serve as a compelling differentiator and attract borrowers from the Convex/Curve community and beyond.

As we proceed, our next steps will involve leveraging our robust in-house asset scoring model to assess the risk and performance parameters associated with CVX. We will delve deeper into the technicalities of CVX, evaluating aspects such as liquidity, volatility, and overall market sentiment. This comprehensive analysis will guide our parameter recommendations, ensuring that we maintain the right balance between risk management and attractive returns.

Asset Score

The RWG evaluated CVX making use of our in-house comprehensive asset scoring model. This framework evaluates the relative “risk” of CVX as an asset, using wETH as a benchmark, by considering six essential factors: market capitalization, trading volume, price volatility, token distribution, project fundamentals, and token utility. A breakdown of the Total Asset Score (TAS) follows:

Token Contract Address: 0x4e3fbd56cd56c3e72c1403e103b45db9da5b9d2b
Assessment date: September 12th, 2023

Component	Link/Rationale	Score

Market Capitalization (MCS)	MCS=min(10, (CVX Supply * CVX Price * 200) /(wETH Supply * wETH price)	9.38
DEX Trading Volume (TVS)	TVS =min(10, (30 Day Avg Token Trading Volume * 200 / 30 Day Avg wETH Trading Volume)	3.27
Price Volatility (PVS)	PVS =min(10, 10 - (Token Log Price Volatility / wETH Log Price Volatility) * 9)	5.31
Token Distribution (TDS)	Token Distribution Score = min((1- Token Gini Index) * 10 / (1 - wETH Gini Index);10)	4.14
Project Fundamentals (PFS)	Risk Assessment CVX Collateral on FiRM - See Protocol Analysis, and Audits & Bug Bounties Sections	6.92
Token Utility (TUS)	Risk Assessment CVX Collateral on FiRM - See Collateral Analysis Section	10

Total Asset Score

$$TAS = 9.38 * 0.2 + 3.27 * 0.15 + 5.31 * 0.15 + 4.14 * 0.1 + 6.92 * 0.2 + 10 * 0.2$$

$$TAS = 6.96/10$$

Based on the provided information about CVX's scores in different factors, we can draw the following conclusions:

1. **Token Utility**: CVX scores exceptionally in Token Utility, indicating that the token has a wide range of use cases and functionality within its associated ecosystem. This suggests that CVX is highly sought after and valuable due to its utility, making it attractive to users looking for tokens with diverse functionality.
2. **Market Capitalization**: CVX scores exceptionally in Market Capitalization, indicating that the token has a large overall market value. This suggests that CVX has gained significant investor interest and confidence, potentially due to factors such as perceived

adoption, network effects, or market dominance. A high market capitalization reflects the popularity and acceptance of CVX among investors.

3. **Project Fundamentals**: CVX scores fairly in Project Fundamentals, indicating that the underlying project has reasonable attributes in terms of team experience, technology, and roadmap. While not exceptional, this score suggests that the project has a solid foundation and potential for growth, making it a viable investment option.
4. **Price Volatility**: CVX scores fairly in Price Volatility, suggesting that the token's price experiences moderate fluctuations or instability compared to other tokens. While not highly volatile, investors should consider the potential risks associated with price fluctuations when making investment decisions involving CVX.
5. **DEX Trading Volume**: CVX scores poorly in DEX Trading Volume, indicating that the token experiences limited trading activity on decentralized exchanges. Lower trading volume implies lower liquidity and may result in challenges when buying or selling CVX without significant price impact or slippage.
6. **Token Distribution**: CVX scores poorly in Token Distribution, suggesting that the token's distribution is uneven. This may indicate a concentration of tokens among a few holders or addresses, which raises concerns about decentralization, potential market manipulation risks, and limited liquidity.

Parameter Recommendations

After a meticulous analysis of CVX's role in the ecosystem, its utility, distribution, tokenomics, and performance metrics, the RWG proposes the following launch parameters for the integration of CVX into FiRM's lending protocol:

Supply Ceiling: 2,000,000 DOLA

- When setting this parameter, important metrics to consider are CVX's market capitalization and distribution, as well as DOLA's current backing and risk profile. A relatively conservative ceiling reduces exposure to sudden market shocks or price manipulation. By setting the ceiling at 2,000,000 DOLA, we're aiming for a balance between catering to potential market demand and ensuring that DOLA isn't overly exposed to the CVX market. Furthermore, considering CVX's market trends and adoption rates, this ceiling allows for enough room to accommodate growing borrower demand while maintaining a safeguard against unforeseen volatility.

Initial Fed Supply: 500,000 DOLA

- The initial fed supply sets the tone for the market's perception of CVX within the FiRM ecosystem. By starting with a cautious 500,000 DOLA, we're allowing the protocol to gradually integrate CVX. This not only provides a buffer for monitoring its real-time performance and borrower trends but also ensures that the supply doesn't outpace demand, potentially resulting in devalued assets or under-utilized resources in the initial stages.

Daily Borrow Limit: 250,000 DOLA

- CVX's DEX trading volume has shown some inconsistencies. A significant borrowing activity could impact CVX's liquidity and price stability in DEXs. Setting a daily limit ensures that there is no sudden rush or spike in borrowing activities, which could lead to price instabilities. Moreover, this limit is designed to avoid over-concentration of CVX within a short time frame, further reducing the risk of liquidity challenges.

Collateral Factor: 70%

- The collateral factor is pivotal for determining how much borrowers can loan against their CVX holdings. Given CVX's recognized utility and its commendable market cap, it qualifies as a reliable collateral. However, the token's volatility score, though not alarmingly high, does suggest potential for price fluctuations. Furthermore, liquidity distribution is quite poor, as shown in the Liquidity section under Collateral analysis. The Top address (0xA52B2b3A918Effe74F02ffa3C166742af0B36ea7) controls ~25% of on-chain CVX liquidity. On the other hand, slippage figures are encouraging, CEX liquidity is deep (Binance, OKX, Bitget, BitMart), and virtually no existing leverage for CVX exists, which makes it a much safer collateral at least in its current state. Setting the collateral factor at 70% strikes a balance, allowing borrowers to capitalize on their CVX holdings while maintaining a buffer against potential price drops.

Liquidation Factor: 50%

- CVX's potential volatility makes it crucial to have a robust liquidation mechanism. The liquidation factor aligns with the collateral factor to protect the interests of lenders. If CVX's price were to drop significantly (up to 24% in a single block), this factor, tied with the collateral factor, ensures there's sufficient collateral to cover potential losses, minimizing the risk to lenders while ensuring that borrowers are not overly penalized.

Firm Global Supply Ceiling: 44,000,000 DOLA

- The global supply ceiling takes into account all other FiRM market supply ceilings and tallies them along with the proposed supply ceiling for a CVX market.

While CVX shines in areas like token utility and market capitalization, concerns around its DEX trading volume and token distribution suggest potential liquidity and centralization risks. These proposed parameters reflect a balanced approach that capitalizes on CVX's strengths while hedging against its weaker points.

Given the recent liquidity concerns surrounding CVX, a trend reversal should be keenly observed before any future parameter adjustments. Slippage data indicates that the market can handle the current recommended values without significant price disruptions. Yet, the lower scores in DEX volume and token distribution signal potential challenges.

Lastly, continuous monitoring of CVX market dynamics, borrower behavior, and CVX's liquidity in decentralized markets is imperative. Periodic reviews and stress tests under varying market conditions will further refine these parameters, ensuring FiRM remains robust, resilient, and user-centric.

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.