

Revised Risk Assessment of DAI FiRM Market (October '23)

TL;DR

Market	Total Asset Score	Supply Ceiling	Daily Borrow Limit	Collateral Factor	Liquidation Factor	Liquidation Incentive
DAI	10	20M DOLA	1M	90%	50%	5%

The RWG recommends an increase in the supply ceiling and daily borrow limit in FiRM's DAI market, from 5M to 20M and 500k to 1M DOLA respectively. We recommend all other market parameters to remain the same. See *DAI Market* section for more information.

Background

The DAI market has quickly risen the ranks and, in less than 1 month from launch, is now FiRM's third most utilized market, with \$6.27M in deposits and \$5M in borrows. The market can count on six active positions, with an average borrow limit % of 88.6%. Notably, TempleDAO, via their [multisig](#) whitelisted via governance [proposal #135](#), have amassed a sizable DOLA borrow position and have expressed an interest to expand on this. This DOLA has gone towards building a position in the [DOLA/USDC LP on Balancer](#), of which TempleDAO now is top depositor with over 50% pool share. While this behavior is not guaranteed, it should be encouraged as it's a net positive for the DOLA ecosystem. Hence this revised assessment.

Since its inception on September 6th, 2023, the DAI market has yet to undergo parameter adjustments from its original conservative deployment. 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 encourage a behavior for existing and new users in the interest of maintaining stability and security for the platform.

Market	Borrower	Deposits	Max Debt	Debt	In Shortfall?	Seizable	Borrow Limit
X DAI	X				X		
DAI	Temple DAO	5.02M (\$5.02M)	4.52M	4.08M	No	-	90.32%
DAI	0x516E...88A4	316.07k (\$315.98k)	284.38k	260.00k	No	-	91.43%
DAI	0x294F...c531	134.22k (\$134.17k)	120.76k	106.45k	No	-	88.15%
DAI	Edo	54.40k (\$54.38k)	48.94k	38.21k	No	-	78.07%
DAI	TheAlienTourist	13.56k (\$13.56k)	12.20k	10.00k	No	-	81.97%
DAI	0x355C...4652	7.10k (\$7.1k)	6.39k	6.00k	No	-	93.87%

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:

-  Risk Assessment DAI 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.

DAI Market

Asset Scoring Model

Contract Address: [0x6b175474e89094c44da98b954eedeac495271d0f](#)

October 3rd, 2023: The RWG evaluated DAI making use of our in-house comprehensive [asset scoring model](#). The TAS came out to be 10, an 0.02 increase from when DAI was last assessed on July 26th, 2023 and scored 9.98. A breakdown of the Total Asset Score (TAS) follows:

Component	Link/Rationale	Score
Market Capitalization	$MCS = \min(10, (DAI \text{ Supply} * DAI \text{ Price} * 200) / (wETH \text{ Supply} * wETH \text{ price}))$	10
DEX Trading Volume	$TVS = \min(10, (30 \text{ Day Avg Token Trading Volume} * 200 / 30 \text{ Day Avg wETH Trading Volume}))$	10
Price Volatility	$PVS = \min(10, 10 - (Token \text{ Log Price Volatility} / wETH \text{ Log Price Volatility}) * 9)$	10
Token Distribution	Token Distribution Score = $\min((1 - \text{Token Gini Index}) * 10 / (1 - wETH \text{ Gini Index}); 10)$	10
Project Fundamentals	Risk Assessment DAI Collateral on FiRM - See Protocol Analysis, and Audits & Bug Bounties Sections	10
Token Utility	Risk Assessment DAI Collateral on FiRM - See Collateral Analysis Section	10
Total Asset Score		
$TAS = 10 * 0.2 + 10 * 0.15 + 10 * 0.15 + 10 * 0.1 + 10 * 0.2 + 10 * 0.2$		
$TAS = 10 / 10$		

Holders

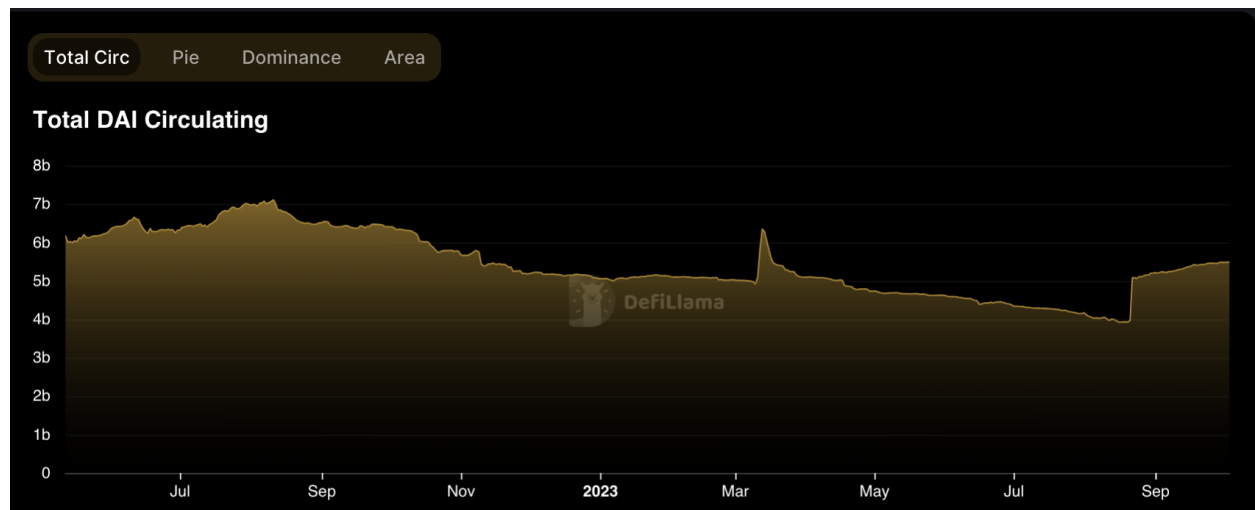
DAI Contract Address:

<https://etherscan.io/token/0x6b175474e89094c44da98b954eedeac495271d0f>

Transfers Holders Info DEX Trades Contract Analytics Comments					
Token Holders Chart					
(Holders Snapshot taken 27 mins ago)					
Top 1,000 holders (From a total of 496,595 holders)					
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Rank	Address	Quantity	Percentage	Value	Analytics
1	PulseX: Sacrifice	278,919,727.186877714909963561	7.2823%	\$278,721,973.10	
2	0x60FaAe...5d29fB7F	153,712,896.132913584452749328	4.0133%	\$153,603,913.69	
3	Polygon (Matic): ERC20 Bridge	142,040,563.742452972734198555	3.7085%	\$141,939,856.98	
4	0x25B313...D5f94b81	104,818,599.30661396439663861	2.7367%	\$104,744,282.92	
5	Arbitrum: DAI L1 Escrow	91,810,779.060051769241689772	2.3971%	\$91,745,685.22	
6	Curve.fi: DAI/USDC/USDT Pool	77,209,059.023142662812977451	2.0159%	\$77,154,317.80	
7	Compound: cDAI Token	56,585,084.77702012202810488	1.4774%	\$56,544,965.95	
8	Binance: Binance-Peg Tokens	43,999,972	1.1488%	\$43,968,776.02	
9	0xD831B3...1F18b86A	43,758,816.193128225182605815	1.1425%	\$43,727,791.19	
10	Optimism: L1 Escrow	42,324,843.898223940887830544	1.1051%	\$42,294,835.58	
11	Nomad Bridge Exploiter 2	39,753,037.511357972649789696	1.0379%	\$39,724,852.61	
12	0x6FF8E4...29e0Ec4A	38,001,001	0.9922%	\$37,974,058.29	
13	Uniswap V3: DAI-USDC 4	37,188,219.949336370231510431	0.9709%	\$37,161,853.50	
14	0x4DEDf2...90B05B8B	35,734,258.340838144690972106	0.9330%	\$35,708,922.75	

From the top holders table on Etherscan, a few addresses stand out. Notably, bridges or associated with bridges, with PulseChain at #1 (7.28%), Polygon #3, Arbitrum #5, Optimism #10, Nomad bridge exploiter at #11. Worth mentioning the [SEC recently charged](#) HEX and PulseChain founder Richard Heart, and that DAI on PulseChain is “worthless”, meaning no guarantee of 1:1 peg between pDAI and DAI and controlled by a single actor.

Liquidity



Per DefiLlama, [DAI MCap](#) is \$5.48B, up 5% in the past month and notably is the only major stablecoin that didn't experience shrinkage. This is testament to the popularity of the enhanced DSR Proposal initiated on the [MakerDAO forum](#), and enacted on August 6th, 2023 (trend reversal on chart above).

LP	Protocol	Liquidity (\$) July 26, 2023	Liquidity (\$) October 3, 2023	24 Hour Volume (\$)
3POOL	Curve	290M	216M (-25%)	32.54M
DAI/USDC	UNI	107.20M	109.8M (2.4%)	3.7M
DAI/USDC	UNI	62.32M	58.8M (-5.6%)	598K
FRAX/3POOL	Curve	159M	10.36M (-93%)	105k

Noticeably, the deepest DAI LP is the infamous 3POOL (DAI-USDC-USDT). This LP has historically [experienced significant imbalances](#) that have caused fear/skeptics to invoke bank runs. Also the Frax/3Pool LP, likely due to liquidity migrations and rebalancing by the Frax Finance team and tied to \$FRAX's ongoing depeg, has experienced a 93% reduction in liquidity depth. The expectation is Frax v3 (launching this week) will lead to FRAX demand via Frax bonds and sFrax (equivalent of DAI DSR), and will bring peg back to \$1.

Analysis suggests that despite the challenges highlighted above, DAI liquidity is still significant and deep enough to accommodate a higher supply ceiling, and daily borrow limit on FiRM.

Slippage Sims

Trade	DAI	DOLA	Slippage
\$1,000,000	1,000,000	1002868	0.29%
\$2,000,000	2,000,000	2004657	0.23%
\$4,000,000	4,000,000	4005520	0.14%
\$6,000,000	6,000,000	6002668	0.04%
\$8,000,000	8,000,000	7994738	-0.07%
\$10,000,000	10,000,000	9976928	-0.23%
\$15,000,000	15,000,000	14349120	-4.34%
\$20,000,000	20,000,000	14811586	-25.94%

The ensuing price impact for even a sizable liquidation would be insignificant, with any trade up to \$10M leading to minimal slippage. With the DAI market's liquidation factor currently set at 50%, a position worth well over 20M DAI would have to be liquidated for price impact to be meaningful. Note, there is also the route of using [the stabilizer](#) (soon to be disabled via DAO governance), which guarantees 1:1 swap DAI for DOLA, with a 15M DOLA per day capacity. Furthermore, data indicates there isn't much leverage present for DAI in lending markets, see [here](#), suggesting a liquidation cascade event is extremely unlikely.

DOLA Backing on FiRM

[Snapshot taken October 3rd, 2023:](#)

Market	Total Collateral	Debt	Collat. Ratio	Avg Borrow Limit	# of positions	Largest Borrower % of Tot Market
cvxCRV	\$13,880,000	\$3,530,000	393.20%	52.98%	14	66
CRV	\$22,940,000	\$7,690,000	298.31%	51.57%	1	100
gOHM	\$4,650,000	\$2,400,000	193.75%	68.82%	14	52
wETH	\$171,230	\$103,530	165.39%	75.58%	7	60.2
stETH	\$172,950	\$74,500	232.15%	53.85%	6	49.7
cvxFXS	\$1,570,000	\$482,460	325.42%	61.46%	6	81.9
st-yCRV	\$316,960	\$69,520	455.93%	45.69%	6	50.3
DAI	\$6,270,000	\$5,000,000	125.40%	88.61%	6	91.6
CVX	\$290,770	\$139,630	208.24%	68.60%	6	53.5
INV	\$68,190	\$11,750	580.34%	57.44%	3	59.5
Total	\$50,330,100	\$19,501,390	258.08%	63.93%	69	N/A

Market	Total Collateral	Debt	Collat. Ratio	As a % of Tot Col.	As a % of Tot Debt
DAI	\$6,270,000	\$5,000,000	125.40%	12.46%	25.64%
All Others	\$44,060,100	\$14,501,390	303.83%	87.54%	74.36%

As anticipated and in line with RWG's past recommendation, a ~25% stablecoin for DOLA collateralization on FiRM has been reached. Importantly, this has been reached with 125.40% average collateral ratio due to conservative (90%) CF.

Parameter Recommendations

Based on the findings of our research presented above, the RWG recommends the DAI market's **supply ceiling** be increased from 5M DOLA to 20M DOLA and **daily borrow limit** increased to 1M DOLA via a governance proposal.

Assuming the new supply ceiling for DAI market is hit, and holding all else equal, would lead to the following stats:

Market	Total Collateral	Debt	Collat. Ratio	As a % of Tot Col.	As a % of Tot Debt
DAI	\$25,080,000	\$20,000,000	125.40%	36.27%	57.97%
All Others	\$44,060,100	\$14,501,390	303.83%	63.73%	42.03%

Upon the proposed changes, the DAI market could potentially have 25,080,000 in total deposits (assuming 125.4% collat. ratio holds) and up to 20,000,000 in borrows. In this scenario and where all else remains unchanged, DAI could constitute 36.27% of total collateral and 57.97% of total debt. It will be up to the Fed Chair's discretion to modulate liquidity in the market, either by injecting or withdrawing it, thereby enabling or constraining specific scenarios to materialize. FiRM operates six other active markets, with additional ones anticipated to launch, all of which are poised to witness an uptick in borrowing activity. Given the scarcity of DOLA liquidity, certain markets can be prioritized, taking into account factors such as collateralization preferences and market borrower behavior, among others.

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.