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Thread: [\\$DJED - A future algo-stable on Cardano. Can it survive?](#)

SUI-3183372 - June 29, 2022, 11:34 am

Following on the heels of a disastrous \$UST implosion, a yet-to-be-stable \$USDD, and a plethora of smaller stablecoins struggling to stay afloat, we're approaching the launch of \$DJED, an algorithmic stablecoin on the Cardano blockchain that seems to be cranking up the notch on what they consider to be an acceptable reserve.

Do you consider this approach to be safe? Safe enough? Still a risk?

The following information about \$DJED is taken from:

<https://cotinetwork.medium.com/djed-frequently-asked-questions-f636735be76>

What is \$DJED and how does its algorithm work?

\$DJED is an over-collateralized algorithmic stablecoin that is backed by \$ADA and uses \$SHEN as a reserve coin.

\$DJED's algorithm is based on a collateral ratio in the range of 400%-800% for \$DJED and \$SHEN in order to ensure there's enough \$ADA in the pool. This means that for every 1 \$DJED minted, there are 3–7 dollars worth of \$ADA, in the reserve pool.

\$SHEN offsets price fluctuations of \$ADA, covering shortfalls and guaranteeing the collateralization rate.

In order to mint the \$DJED stablecoin, users will need to interact with a smart contract by sending \$ADA to its address. The contract will then send \$DJED back to the user. The price of \$DJED will aspire to be \$1. \$DJED is backed by the base coin \$ADA, provided by \$SHEN holders.

Let's assume that 1 \$ADA is worth \$2. In order to mint 1 \$DJED, the user will need to send 0.5 \$ADA to the contract. This process can be repeated, users can send more and more \$ADA to the contract and get more \$DJED.

On the other side, In order to mint \$SHEN, the user will need to send \$ADA to the contract.

This is how the contract ensures there's enough \$ADA in reserve. If the user wants to sell 1 \$DJED, he is sending it back to the contract, which then burns this \$DJED, and sends back the amount of \$ADA that is equivalent to \$1 to the user.

What is the \$SHEN reserve coin?

\$SHEN is the reserve coin of the \$DJED. \$SHEN's main role is to keep a healthy reserve ratio in the contract and incentivize users and investors to provide stability to the contract by bringing \$ADA to the contract. In order to ensure there's enough \$ADA in the pool, \$DJED is over-collateralized by 400%-800%.

\$DJED holders have the priority to redeem their \$DJED into \$ADA. As long as the Reserve ratio is below 400%, \$SHEN holders won't be able to redeem their \$SHEN for \$ADA, since they cover shortfalls and guarantee the collateralization rate.

Similarly, the smart contract will prevent the purchase of \$SHEN once a reserve ratio reaches

800% in order to prevent dilution for the \$SHEN holders

By trading \$SHEN, users can contribute to the stability of \$DJED by providing liquidity to keep the peg ratio at a sufficient level. Having a reserve coin is crucial for the success of the stablecoin.

How does the reserve contract work?

Reserve contracts are built from equity and liabilities pools of \$ADA.

Reserve contracts are built from pools of both \$ADA equity and liabilities

To mint \$DJED, the users will send \$ADA to the contract, which will then go to the liabilities pool, following which the contract will send them back \$DJED.

To burn \$DJED, the users will send \$DJED to the contract, which will burn them and send back \$ADA from the liabilities pool to them.

To mint \$SHEN, the users will send \$ADA to the contract, which will go to the equity pool, and the contract will send them back \$SHEN.

To burn \$SHEN, the users will send \$SHEN to the contract, which will burn it and send back \$ADA from the equity pool to them.

There are two ways in which the reserve can grow: Fees are paid to the reserve by the users for every interaction they have with the contract, and when the \$ADA value increases.

The equity is simply the reserves minus the liabilities.

This means that for every 1 \$ADA in the liabilities pool, there are 3–7 \$ADA in the equity pool in order to keep the ratio between 400%-800%.

How does the reserve ratio affect users' ability to mint/burn?

If a reserve ratio falls outside the 400% — 800% range, certain mint/burn operations are prohibited as you can see in the following image:

What happens if the reserve ratio is below 400%

In this case, the smart contract will prohibit minting any new \$Djed. In addition, \$SHEN holders won't be able to burn their \$Shen at any time while the reserve ratio is below 400%.

At that point, only 2 actions are allowed:

\$Djed holders can burn their \$Djed and redeem it for \$ADA, which increases the reserve ratio.

\$Shen holders can mint additional \$Shen in order to increase the reserve ratio.

What happens if the reserve ratio is above 800%?

In this case, the smart contract will prohibit minting new \$Shen. Burning \$Shen is allowed and will decrease the reserve ratio.

Why was the 400% ratio chosen for stabilizing \$DJED?

With 400%, the protocol can tolerate an instantaneous crash of 75% in the price of the underlying asset (\$ADA). Looking at historical prices of \$ADA, 75% seems like sufficient protection from an instant crash of price as it's a very unlikely scenario.

What makes \$DJED different from \$UST?

Although \$DJED and UST are both algorithmic stablecoins, only \$DJED is over-collateralized and can prevent a death spiral by blocking the burning and minting of coins.

When it comes to UST, users could have always redeem \$LUNA for \$UST, and vice versa. Therefore, UST can be under collateralized. Every \$UST in circulation reduces the circulation of \$LUNA. \$DJED is over-collateralized (up to 8X), which decreases its risk of being unpegged. This means that for every 1 \$DJED minted, there are 3–7 dollars worth of \$ADA in the reserve pool, meaning that \$DJED contract has enough funds to buy back all the \$DJED stablecoins in circulation for 1USD worth of the backing asset, thus maintaining the peg, and would still have funds left in the reserve. In addition, the base tokens (\$ADA) are not minted when \$DJED is burned, so even if the price of \$ADA decreases, the total supply of \$ADA won't increase as happened with LUNA.

How is the price of \$SHEN calculated? Is there a minimum price for \$SHEN?

\$SHEN's price is calculated as follows:

Equity divided by the number of \$SHEN tokens in circulation.

For example:

\$ADA price: \$0.5

\$SHEN in circulation: 100,000

\$ADA in the equity pool: 400,000 \$ADA (worth of 200,000 USD)

\$SHEN price= 4 \$ADA (2 USD): 400,000 \$ADA, divided by 100,000 \$SHEN in circulation.

Is \$SHEN also used as collateral in the reserve?

No, there is no \$SHEN reserve, only \$ADA.

How are the transaction fees paid to \$SHEN holders and when? Do they need to burn their \$SHEN in order to get their rewards?

Fees are sent to the contract's reserve, hence increasing the contract's equity. In order to get their rewards, \$SHEN holders need to burn their \$SHEN.

To protect \$DJED holders, \$SHEN holders are not allowed to burn \$SHEN when the reserve ratio is below the minimum threshold of 400%.

What are the incentives in minting \$SHEN?

\$SHEN holders are rewarded with fees from minting and burning \$DJED. The fees are collected and sent to the reserve, and \$SHEN holders get a share of them.

Apart from the fees, in case the price of \$ADA goes up, the equity increases, therefore the price of \$SHEN increases, as it is being calculated by Equity divided by the number of \$SHEN tokens in circulation.

Is the reserve of \$SHEN large enough to absorb \$ADA volatility?

Looking at historical prices of \$ADA, among other research, to determine the reserved ratio — The 400–800% ratio gives a large enough cushion to absorb \$ADA Volatility.

??? ? ??? ??? - June 29, 2022, 2:47 pm

I have only skimmed this i wont lie but surly the better the protection just means the bigger the bubble would have to get. For example lets say it got to a large marketcap, the fear could cause a crash over the tolerance. Surely it creates a target for shorters in distant future. Is there not a scenario where the orderbooks could be cleared across exchanges and crash 99% in an hour or something.