



Liquid Loans

Whitepaper V1.0

Decentralized
Borrowing Protocol.

Built for PulseChain.



www.LiquidLoans.io



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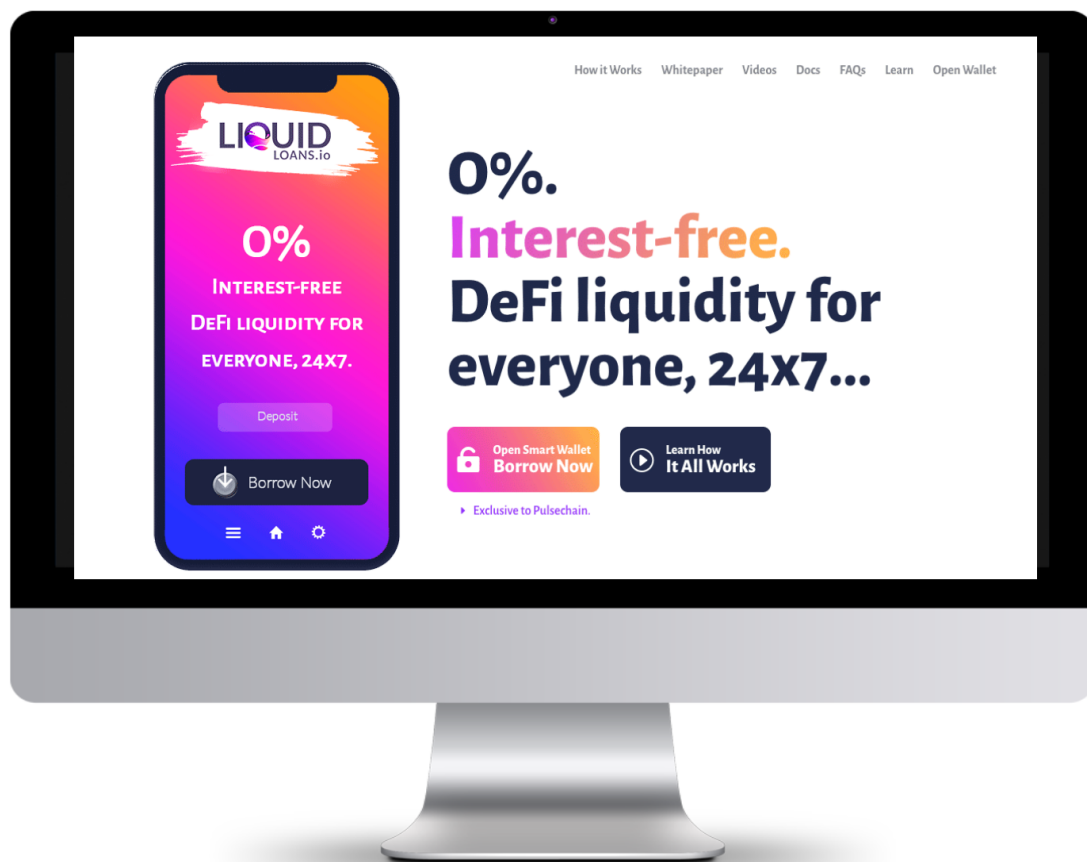
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0% Interest Rate

Liquid Loans charges a small, one-time fee to borrow USDL instead of highly variable interest rates.



1 USDL = 1 USD

Borrow USDL, a fully backed stablecoin pegged to the US Dollar that's maintained by an algorithmic monetary policy.



110% Collateral Ratio

Liquid Loans powerfully efficient and fully autonomous liquidation mechanism allows users to get the most liquidity for their PLS.



What Is Liquid Loans?



Liquid Loans is a true decentralized borrowing protocol that allows PulseChain token (PLS) holders to obtain maximum liquidity against their collateral without selling, and without paying interest.



No admin keys



Immutable



Non-Custodial

After locking up PLS as collateral in a smart contract and creating an individual position called a “Vault”, the user can get instant liquidity by minting USDL, a USD-pegged stablecoin.

Each Vault is required to be collateralized at a minimum of 110%. Any owner of USDL can redeem their stablecoins for the underlying collateral at any time.

The redemption mechanism along with algorithmically adjusted fees guarantee a minimum stablecoin value of \$1.

A liquidation mechanism based on incentivized stability deposits and a redistribution cycle from riskier to safer Vaults provides stability at a much lower collateral ratio than current systems.

Stability is maintained via economically-driven user interactions and arbitrage, rather than by active governance or monetary interventions. The protocol has built-in incentives that encourage early adoption.



1. Introduction



1.1 Stablecoins and collateralized debt platforms

Cryptocurrencies such as Bitcoin or Ethereum have shown significantly higher price volatility than traditional asset classes like stocks or bonds. Nevertheless, many people use tokens for investments, payments, trading or pure speculation.

Fiat-backed stablecoins like Tether, USDC, Paxos and TrueUSD have emerged as a stable, but centralized alternative to volatile tokens.

Additionally, crypto-backed stablecoins have become increasingly popular and a fundamental driver for the Decentralized Finance (DeFi) movement. Acting as collateralized debt platforms, MakerDAO, Equilibrium and Synthetix allow holders to lock up volatile tokens in exchange for freshly generated stablecoins. Owners can thus unlock some of the economic value of their tokens while remaining fully invested. Beyond that, token holders can achieve leverage by using the obtained liquidity to lock up additional collateral to get even more liquidity.

1.2 Shortcomings of collateralized debt platforms

Collateralized debt platforms do not rely on lenders to provide liquidity as they can mint the stablecoins themselves. With no refinancing costs, such systems can generate liquidity for free. Yet, most platforms charge recurring fees for borrowing (as high as 20.5% p.a) which accumulate over time. The variable fees (stability fees) are meant to regulate coin supply in order to maintain the peg of the issued stablecoin, and correspond to an interest rate in traditional banking. Affecting new and existing loans alike, interest rates only have an indirect impact on monetary supply and are rather ineffective in the short term.



1. Introduction

(continued)



While existing borrowers may not have the means to repay their loans as an immediate reaction to rising interest, short-term speculators and leverage seekers might not be greatly affected by interest rates in the first place.

Oftentimes, governance token holders are expected to manage the economic parameters of their systems (e.g. set the fee rate) in the best interest of the protocol. In practice, on-chain governance has been a difficult and heavily debated topic, with notoriously low turnouts, potentially misaligned incentives, and a high concentration of power in the hands of a few.

In addition to charging stability fees, existing platforms typically require the individual borrower's position to be significantly overcollateralized. This makes the positions 'capital inefficient' since borrowers tend to maintain much higher collateral ratios in practice than the minimum. Existing platforms require overcollateralization due to the liquidation mechanisms they apply to positions that become undercollateralized. Both collateral auctions and fixed-price selloffs have turned out to be inefficient by design, leaving room for improvement.

Finally, crypto-backed stablecoins are not generally redeemable at face value and cannot guarantee a hard price peg due to the lack of direct arbitrage cycles. There is no issuance or redemption mechanism that would enable arbitrageurs to make guaranteed profits by buying freshly minted stablecoins or selling them back to the protocol whenever the price deviates from the peg.

Instead, the systems rely on a less effective soft peg mechanism, which stabilizes the exchange rate by making the loans more or less attractive through variable fees. Crypto-backed stablecoins are thus usually subject to higher price volatility than fiat-backed stablecoins.



1. Introduction

(continued)



To summarize, existing collateralized debt platforms typically have the following downsides and risks:

- ✗ High and unpredictable interest fees for borrowers
- ✗ Problematic governance mechanisms
- ✗ Necessarily high collateral ratios, due to inefficient liquidation processes
- ✗ No direct redemption mechanism to ensure price stability

There is a better way... introducing...



“ Liquid Loans... DeFi liquidity for everyone.

The first truly decentralized liquidity platform on PulseChain.



2. Key Benefits



A better system is possible. Liquid Loans protocol improves upon the mentioned issues by offering the following key benefits:

- ✓ Interest-free liquidity
- ✓ Low collateral ratio (110%)*
- ✓ Hard price floor
- ✓ Governance-free algorithmic monetary policy
- ✓ Censorship resistance
- ✓ Growth incentives

** And continue borrowing liquidity as your collateralization ratio improves.*

✓ 2.1 Interest-free liquidity

Liquid Loans provides liquidity without charging borrowers interest or recurring fees. PLS holders can obtain liquidity against their collateral for free. However, as an algorithmically controlled monetary instrument, the protocol charges a Borrowing Fee (as a one-time fee) for newly drawn liquidity to support the peg with the USD.

Users are free to utilize their stablecoin, USDL, to participate in the broader DeFi market to generate yield, for example by purchasing and staking HEX.



2. Key Benefits

(continued)



✓ 2.2 Low collateral ratio (110%)

When an individual position's collateral ratio falls below a certain threshold, a lending system must take special action to ensure the stablecoin supply remains fully backed.

In existing systems, this is done by liquidating the position in an interactive process. Selling the collateral from undercollateralized positions at a fixed price is inefficient by design as it requires a significant discount to the current collateral price to ensure that it can be sold quickly in difficult situations.

Collateral auctions replace discounts by an economically fair, but potentially lengthy and error-prone bidding mechanism. The longer it takes to sell the collateral, the higher the risk that its value might drop further. Auction-based systems thus have to set their liquidation ratio high enough to provide an extra margin for subsequent price drops during liquidation.

Liquid Loans applies a two-step liquidation mechanism aimed at instantly liquidating undercollateralized positions. Since the acquirers (also known as Stability Pool depositors) are known in advance, there is no need to find a buyer for a collateral buyout on the spot when a position becomes undercollateralized.

This advantage allows for a considerable reduction in the collateral ratio, while keeping stability high. The system also relies on sufficient collateralization of all positions in aggregate, rather than on the collateral of individual positions.



2. Key Benefits

(continued)



✓ 2.3 Hard price floor

Liquid Loans follows a maximally expansive monetary policy by providing free liquidity at zero issuance costs by default. On the other hand, the issued USDL tokens are fully redeemable against the collateral. This enables the protocol to grow rapidly, but not so fast as to lose control over the peg.

USDL tokens can be returned to the protocol (redeemed) in exchange for a PLS amount worth the face value of the returned USDL minus a Redemption Fee. This direct price stability mechanism results in a price floor of \$1. At lower rates, arbitrageurs can make profits by redeeming USDL for PLS and immediately selling the latter at a higher dollar price than the current value of the returned USDL. Arbitrageurs will thus help to restore the peg by driving demand for USDL, as the Redemption Fees are designed to enable arbitrage gains whenever the peg is broken.

✓ 2.4 Governance-free algorithmic monetary policy

Unlike competing platforms, Liquid Loans does not rely on a governance mechanism to vote on monetary interventions like changing an interest rate. All protocol parameters are either preset and immutable or algorithmically controlled by the protocol itself, making governance unnecessary.

Liquid Loans uses the current fraction of redeemed USDL as an indicator of a peg deviation in order to autonomously set a base rate, which determines both the Redemption Fee and the Borrowing Fee. The base rate increases with the number of redeemed tokens and tends to decay to 0% again when no redemptions take place. As opposed to an unpredictably fluctuating interest-rate, the Borrowing Fee immediately and predictably reduces the attractiveness of new loans and throttles the generation of fresh USDL.



2. Key Benefits

(continued)



In addition, redemption of USDL for PLS directly decreases the current stablecoin supply and may motivate low-collateral borrowers to repay their loans, which has the same effect.

These measures exert upward pressure on the value of USDL whenever it is less than \$1, and help to stabilize its price.

✓ 2.5 Censorship resistance

Liquid Loans is a protocol rather than a platform. There is no administrator with special privileges that could interfere with, alter, or halt the operation of the protocol in any way.

✓ 2.6 Growth and early adopter incentives

Users that drive growth and robustness by contributing to system stability get rewarded with LOAN, the system's secondary token. These tokens can be staked in order to earn a portion of the protocol revenue stemming from Borrowing and Redemption Fees.

The protocol continuously issues LOAN to users who have deposited USDL to the Stability Pool. LOAN is issued according to a release schedule that halves the number of tokens distributed each year, favoring early adopters.



3. System Functionality



3.1 Borrower operations

Anyone may obtain liquidity anytime in an entirely permission-less manner after depositing PLS into a **Vault**. The deposited PLS collateral gets locked up in the Vault and allows its owner to withdraw up to **90.91%** of its current dollar value in the form of USDL stablecoins.

In other words, the Vault must always maintain a **Minimum Collateral Ratio** (MCR) of 110%, defined as the ratio of the current dollar value of the collateral to the withdrawn liquidity.

Borrowers can repay or borrow more liquidity within the limits of the MCR whenever they wish. Within the same limit, they can retrieve their collateral. Moreover, a Vault can be topped up with more collateral as needed.

The protocol imposes a minimum debt of 2,000 USDL. Thus, Vaults can only be opened with an initial debt of at least 2,000 USDL and may never go below a debt of 2,000 USDL, unless when fully repaid and closed.

-- Liquidation Reserve.

When a borrower opens a new Vault, an amount of 200 USDL is reserved and held back by the protocol as a compensation for the gas costs if the Vault needs to be liquidated at some point. The 200 USDL is added to the Vault's debt, impacting its collateral ratio. When a borrower closes their Vault, the Liquidation Reserve is refunded, i.e. the corresponding 200 USDL debt on the Vault is cancelled. Thus the borrower needs to pay back 200 USDL less to fully pay off their debt.



3. System Functionality

(continued)



-- **Borrowing Fee.**

The protocol charges a one-time Borrowing Fee for the borrowed liquidity. The fee is added to the Vault's debt and is given by a base rate + 0.5% (see 3.3 Redemption mechanism "Redemption fee and base rate") multiplied by the amount of liquidity drawn by the borrower – minimum Borrowing Fee is 0.5%, and the maximum is 5%.

Example.

The base rate stands at 0.5%. The borrower opens a new Vault by depositing 400,000 PLS* and draws 4,000 USDL. Being subject to a Liquidation Reserve of 200 USDL and charged a 1% fee on the 4,000 USDL, the borrower will obtain 4,000 USDL, while incurring a debt of 4,240 USDL (4,000 + 200 + 40). To close the Vault and fully retrieve the 400,000 PLS, the borrower needs to repay 4,040 USDL as the Liquidation Reserve gets refunded.

** Assuming 400,000 PLS will be sufficient to cover the MCR plus fees.*

-- **Restrictions due to Recovery Mode.**

Borrower operations are restricted in several respects when the system is in Recovery Mode or at the verge of it (see 5 Recovery Mode).

To avoid liquidation despite PLS price changes, it is highly recommended to keep the collateral ratio of a Vault well above the MCR. Given that in Recovery Mode, liquidations may even affect Vaults with higher collateral ratios (maximally up to 150%), risk averse borrowers should sufficiently collateralize their Vaults to avoid being near the bottom tiers of collateralization relative to other Vaults whenever the system is close to Recovery Mode. Maintaining a relatively high collateral ratio also reduces the risk of getting hit by a redemption (see 3.3 Redemption mechanism).



3. System Functionality

(continued)



3.2 Stability Pool operations

The Stability Pool is the first line of defense in maintaining system solvency: stability deposits absorb and cancel the debt from defaulted Vaults.

In return, Stability Pool participants are rewarded with the acquisition of collateral from liquidated positions at a significant discount. Participants will also continuously receive an allocation of LOAN tokens.

USDL holders can become Stability Providers by depositing USDL tokens into the Stability Pool. In principle, the deposited tokens can be withdrawn from the pool anytime, so long as they have not been used for absorbing defaulted Vaults. However, deposit withdrawal is temporarily disabled when there are undercollateralized Vaults in the system that can be liquidated.

When a Vault is liquidated, some amount of USDL in the Stability Pool which corresponds to the debt of the liquidated Vault is burned. In exchange, the Stability Pool receives all of the collateral from that Vault. Because liquidations happen just below 110%, this means participants achieve a collateral gain in PLS at the time of liquidation. The Stability Providers' current deposit as a proportion of the total USDL in the pool determines the collateral share it receives from the liquidation.

While Stability Providers are free to withdraw all or part of their remaining USDL deposit, the system always pays out the entire collateral gain made by the depositor. Stability Providers that are also borrowers can choose to transfer the collateral gain to their Vaults instead of paying it out to their PLS addresses. In other words, the system uses the accumulated PLS to top up their own collateral.



3. System Functionality

(continued)



3.3 Redemption mechanism

Liquid Loans's token, USDL, is a fully redeemable stablecoin. At any time, the system allows holders to redeem their USDL tokens for the underlying PLS collateral based on the face value of the redeemed tokens, the current PLS:USD rate and the current base rate. This enables direct arbitrage whenever USDL trades for less than \$1, by creating a price floor for USDL.

When redeemed, the system uses the USDL to repay the riskiest Vault(s) with the currently lowest collateral ratio, and transfers the respective amount of PLS from the affected positions to the redeemer. The amount taken from each borrower is capped by their corresponding debt, so the affected borrowers can keep their collateral surpluses.

In other words, borrowers lose the same nominal amount of debt (in USDL) as they lose collateral (in USD) and do not suffer a net loss from redemptions.

On the flipside, redemptions have a positive effect on the total collateralization of the system, increasing robustness and price stability.

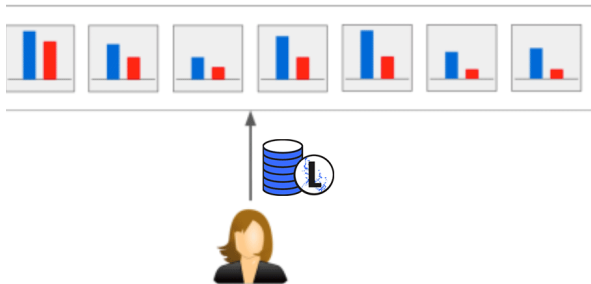
Vaults that are fully redeemed from, i.e. whose debt is 0, are automatically closed, and the borrower can reclaim the PLS surplus. The protocol enforces (by truncating the redeemed amount) that no Vault can be left with a non-zero debt below 2,000 USDL.

3. System Functionality

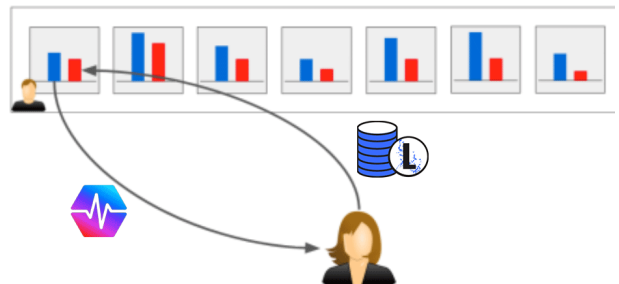
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When Alice wants to redeem her USDL token...



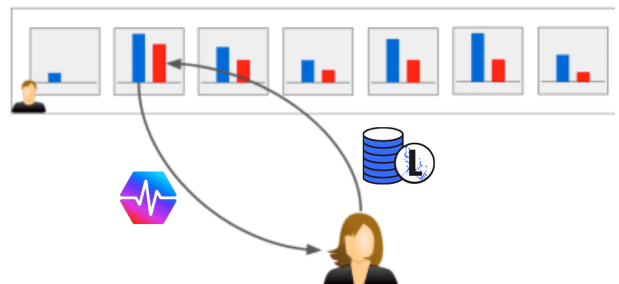
USDL is redeemed against the "riskiest" Vault...



Retaining the surplus collateral for its owner...



If more PLS is needed, it proceeds with the next one.



Upon every redemption, the base rate is increased by the proportion of redeemed USDL and then applied to the current redemption as follows:

$$b(t) := b(t - 1) + \alpha \times \frac{m}{n}$$

where $b(t)$ is the base rate at time t , m the amount of redeemed USDL, n the current supply of USDL and α constant parameter set to 0.5.

The base rate decays over time due to a decay factor that is applied with every redemption and issuance of USDL prior to calculating the resulting fee.



3. System Functionality

(continued)



The decay is of the form:

$$b(t) := b(t - 1) \times S^{\Delta t}$$

... where S is a decay factor (e.g. 0.94) and Δt the time elapsed since the last redemption or loan issuance. The decay factor S is chosen such that the half-life of the base rate is 12 hours.

Redemptions are thus subject to a **Redemption Fee** which is a function of the **base rate** and the redeemed amount of USDL. The minimum Redemption Fee is 0.5%. The fee is subtracted from the redeemed USDL, reducing the PLS that the redeemer receives in return.

Example

USDL currently trades at \$0.95, and the current base rate is 1.4%. An arbitrageur redeems 150,000 USDL, which the total USDL supply is 10 million. The last redemption happened 2 hours ago and no liquidity has been issued in the meantime. The hourly decay factor is 0.94.

The system first applies the decay rate to the current base rate:

$$b(t) := b(t - 1) \times S^{\Delta t} = 0.014 \times 0.94^2 = 0.01237$$

It then increases the base rate in proportion to the fraction of the total supply redeemed ($a = 0.5$):

$$b(t) := b(t - 1) + 0.5 \times \frac{m}{n} = 0.01237 + 0.5 \times \frac{150000}{10000000} = 0.01987$$

As a result, the redeemed receives 147,019.44 USD ($150,000 \times (1 - 0.01987)$) worth of PLS. Since the exchanged USDL is currently worth only 142,500 USD ($150,000 \times 0.95$), the redeemer achieves an arbitrage gain of \$4,519.44).

4. Vault Liquidation Mechanism



To ensure that the entire stablecoin supply remains fully backed by collateral, Vaults that fall under the Minimum Collateral Ratio of 110% (referred to as “undercollateralized”) are subject to liquidation.

Liquidation can be triggered by anybody and allows liquidating multiple Vaults in one batch, either by specifying a set of Vaults or in ascending order starting from the Vault with the lowest collateral ratio.

While the former approach allows to quickly liquidate large Vaults, the latter is more resilient against the race conditions that may occur in case of multiple simultaneous liquidations.

In most cases, Stability Providers and/or high-collateral Vaults will have a financial incentive to trigger liquidations as fast as possible. To compensate for the gas costs of a liquidation even in times of high gas prices, Liquid Loans pays the reserved 200 USDL (see 3.1 Borrower operations) plus 0.5% of the Vault's collateral (PLS) to the liquidator.

Liquid Loans utilizes a two-step liquidation mechanism in the following order of priority:

1. Offset undercollateralized Vaults against the Stability Pool
2. Redistribute undercollateralized Vaults to other borrowers



4. Vault Liquidation Mechanism

(continued)



4.1 Offset undercollateralized Vaults against the Stability Pool

As mentioned previously, the Stability Pool is funded by Stability Providers who deposit USDL tokens to the contract. It primarily functions as a “shock absorber”: deposited tokens soak up liquidated USDL debts, and depositors are rewarded for their contribution.

When a Vault becomes undercollateralized ($<110\%$) due to a drop in the PLS price, the debt (in USDL) can be immediately offset against the same amount of pooled USDL tokens, which get burned by the system.

In return, the system transfers 99.5% of the collateral (in PLS) from the liquidated Vault to the Stability Pool, while paying out the remaining 0.5% to the liquidator.

The USDL tokens in the Stability Pool will thus be replaced by PLS over time. Generally, each liquidation contributes a **collateral surplus gain** to the pool: the collateral is almost always worth more (in USD) than the burned USDL tokens.

This holds because the liquidation is triggered below a collateral ratio of 110%, but with a very high probability significantly above 100% (unless PLS drops by $>9.09\%$ between two price feed updates).

A Stability Provider receives shares of the liquidations that occur during the lifetime of their USDL deposit. Upon obtaining the collateral, the combined value of the remaining USDL deposit and the PLS gain will very likely exceed the prior value of the deposit. Stability Providers are thus incentivized by this expectation of positive returns.

4. Vault Liquidation Mechanism

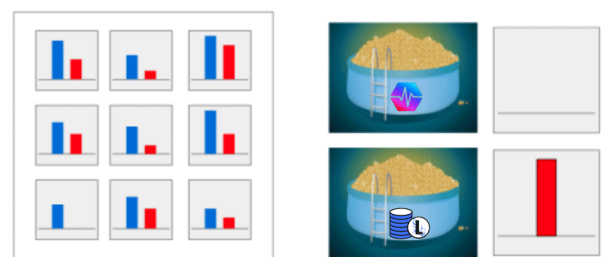
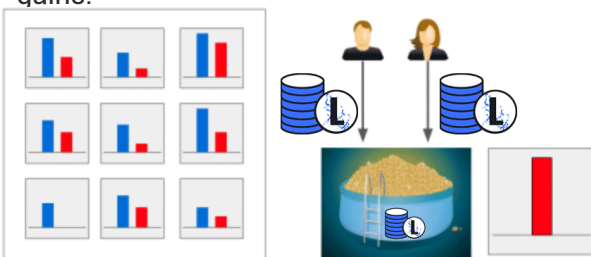
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An individual's share of the surplus gains depends on the ratio of its remaining USDL deposit (as reduced by past liquidations) to the total amount of USDL contained in the pool. If no new deposits are made, all individual shares will stay the same throughout liquidations. As new deposits are made, earlier depositors are incentivized to top up their deposit, to maintain their share of future rewards.

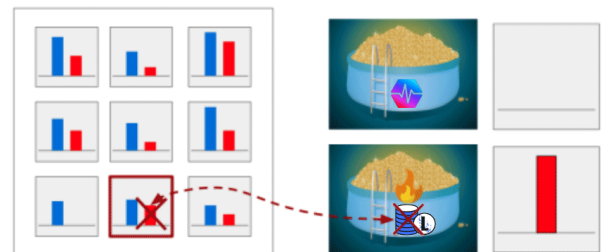
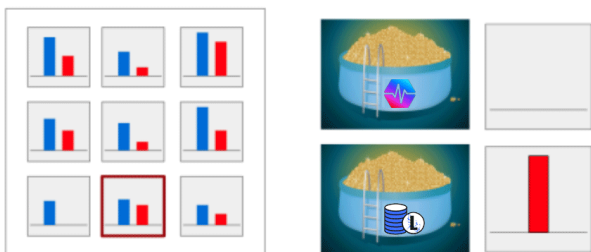
1. Holders can deposit USDL to the Stability Pool...

2. which also contains a pool for collateral gains.



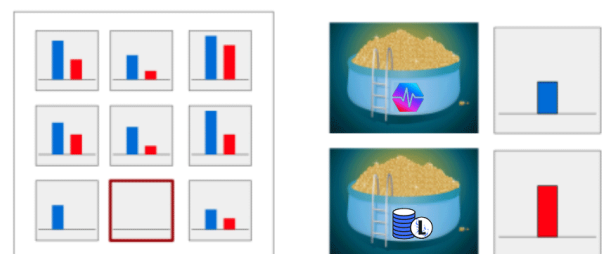
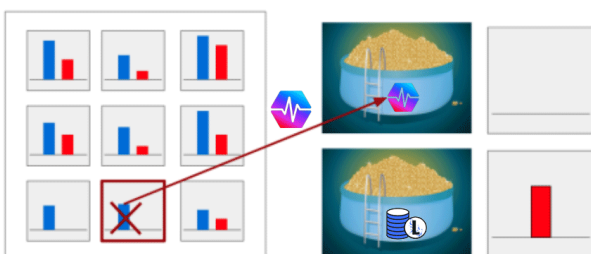
3. When a Vault becomes undercollateralized...

4. USDL in the pool is burned to offset its debt...



5. And its collateral is sent to the collateral pool...

6. Such that the Vault gets liquidated.





4. Vault Liquidation Mechanism

(continued)



4.2 Redistribute undercollateralized Vaults to other borrowers

It is possible that the USDL tokens contained in the Stability Pool are not sufficient to offset all undercollateralized Vaults, or that a Vault's debt can only be partially absorbed as the Stability Pool runs out of USDL during a liquidation.

In such a case, the system redistributes the remaining debt and collateral from the partially liquidated Vault as well as the remaining undercollateralized Vaults to all existing positions.

The redistribution of the collateral and debt is done in proportion to the recipient Vault's collateral amount.

This means that Vaults which are heavily collateralized will receive more debt and collateral from liquidated positions than those with low collateralization, ensuring that the system does not create cascading liquidations.

Example.

The two charts on the next page show the Vaults A, B, C & D with their debt and collateral amounts. Vault D has become undercollateralized and is redistributing to A, B & C.

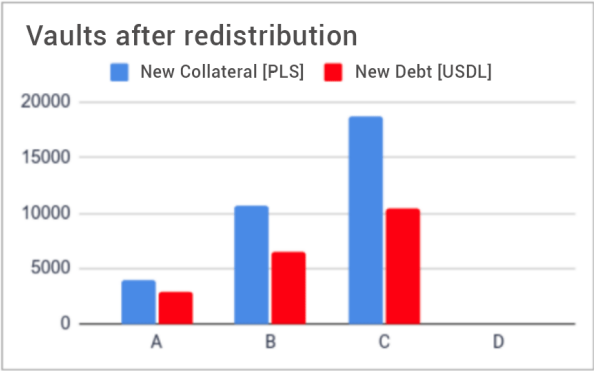
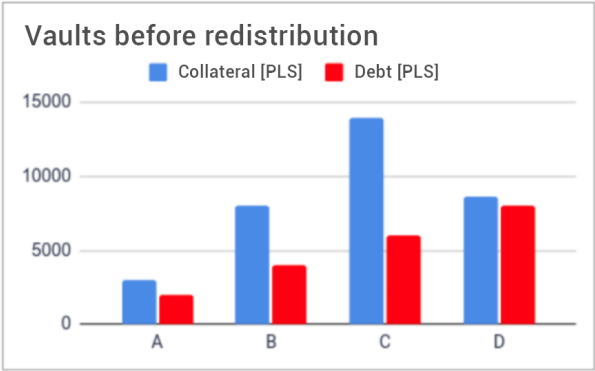
4. Vault Liquidation Mechanism

(continued)



Table 1. Vault debt and collateral amounts.
(estimating the price of PLS at 0.01 USD for calculations)

Vault	Debt USDL	Coll. PLS	CR	Debt Increase	Coll. Increase	New Debt USDL	New Coll. PLS	New CR	Net Gain USDL
A	2,000	300k	150%	961	103,763	2,961	403,763	136%	76.86
B	4,000	800k	200%	2,562	276,701	6,562	1,076,701	164%	204.96
C	6,000	1.398m	233%	4,477	483,536	10,477	1,881,536	180%	358.17
D	8,000	864k	108%	-8,000	-864,000	0	0.0	n/a	-640.00
Total	20,000	3.362m	168%	0.0	0.00	20,000	3.362m	168%	0.00



Receiving collateral and debt shares should generally result in a **net gain for borrowers**, though at the same time it reduces their own collateral ratios. The risk of being drawn down and becoming undercollateralized as a recipient is minimal, and only affects Vaults that are already very close to the Minimum Collateral Ratio (e.g. 111%).

System solvency depends on the amount of USDL tokens in the Stability Pool and ultimately on the Total Collateral Ratio (TCR) across all Vaults, given by the total collateral (in USD) divided by the total debt (in USDL).



5. Recovery Mode



To keep the system sufficiently collateralized even in times of crisis, the protocol incorporates a Recovery Mode, which is triggered as an ultimate ratio if the TCR falls below the critical threshold of 150%.

In this special mode of operation, Vaults with a collateral ratio between 110% and the current TCR become subject to liquidation as well. Such extra liquidations are only possible against the Stability Pool (i.e. they are exempt from redistribution), and require that the entire debt can be liquidated at once.

To protect the borrower from an excessive loss, the collateral that is offset against the Stability Pool is capped at 110% of the liquidated debt. The borrower can reclaim any collateral remainder above 110% any time after the liquidation.

During Recovery Mode, the liquidation mechanism is thus described by the following rules:

Table 2. Recovery Mode

Vault's Collateral Ratio	Liquidation Procedure
< 100%	The Vault is liquidated by directly redistributing its entire debt and collateral to other Vaults, with no prior Stability Pool offset.
Between 100% and 110%	As normal operation, the Vault is liquidated by first offsetting its debt and collateral against the Stability Pool and redistributing any remainder to other Vaults.
Between 110% and TCR	The Vault is liquidated by offsetting its debt against the Stability Pool, provided that the entire debt can be liquidated. The liquidated collateral is capped at 110% of the debt, and the remainder above 110% is reclaimable by the borrower.
TCR	No liquidation possible.



5. Recovery Mode

(continued)



These changes incentivize Stability Providers to increase their deposits during Recovery Mode, which in turn improves the Total Collateral Ratio of the system.

The existence of Recovery Mode alone helps to avert the system falling below the critical threshold: the threat of the extra liquidations incentivizes risky borrowers to improve their collateral ratios and Stability Providers to increase their deposits, long before the system actually reaches the threshold ratio of 150%. On the other hand, risk-averse borrowers are recommended to maintain a collateral ratio above 150% at all times.

Restrictions on Vault operations

All Vault operations that would deteriorate the TCR are temporarily disabled if the system is in Recovery Mode or if the operation would trigger Recovery Mode by pushing the TCR below 150%.

In Recovery Mode, it is only possible to:

- ✓ top up collateral
- ✓ repay debt
- ✓ top up collateral and repay debt in the same transaction
- ✓ top up collateral and increase debt in a way that pushes the Vault's collateral ratio above 150%

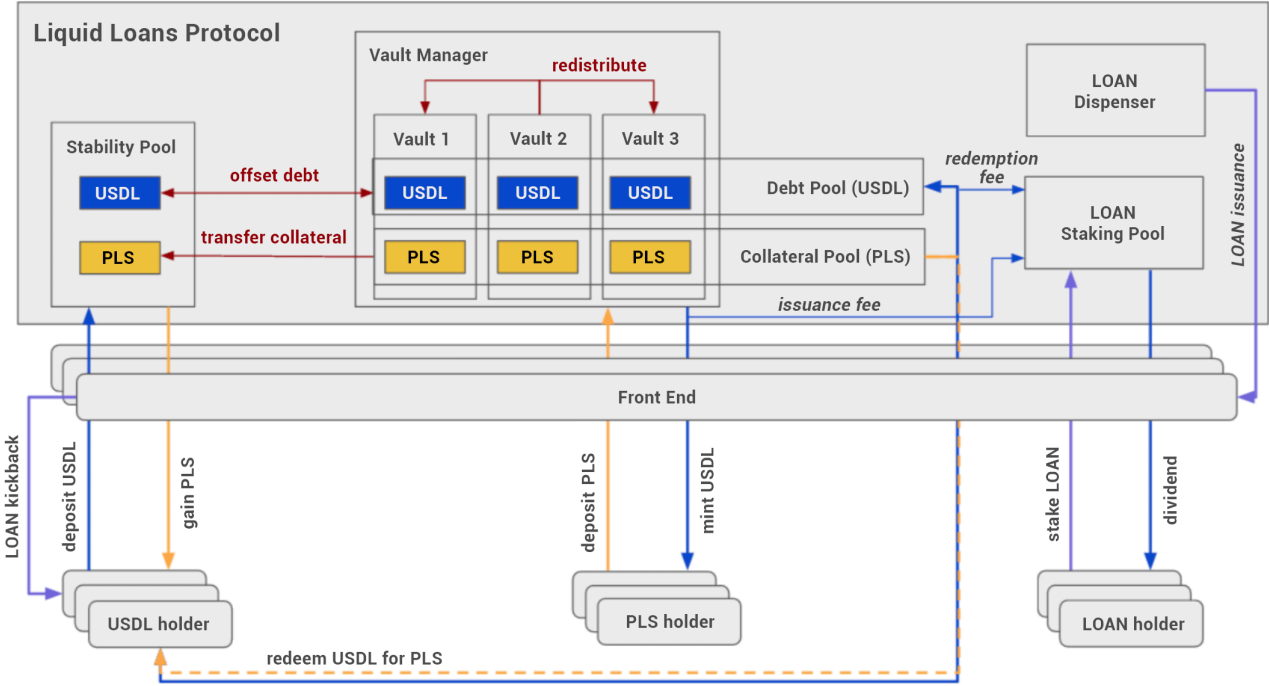
Furthermore, new Vaults can only be opened during Recovery Mode if their collateral ratio is at least 150%. This prevents users from inadvertently creating Vaults that may immediately fall victim to a liquidation.



6. Protocol Flowchart



The following diagram summarizes the token flows between the protocol and its users:



We have thus introduced Liquid Loans, a collateralized debt protocol with liquidation and redemption mechanisms that pushes the boundaries of capital efficiency and costs of liquidity.

It is the first system of its kind that issues a stablecoin with a hard price floor against the underlying fiat currency on PulseChain.

Furthermore, Liquid Loans follows new paths to incentivize decentralization and growth from the start by tokenizing and redistributing a significant part of its protocol revenue to users.