APWine - Whitepaper

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Abstract

APWine is a protocol to tokenize future yield generated through DeFi protocols. Lenders lock bearing interest tokens in our smart contracts for predefined periods of time, getting tokens representing the yield generated at the end of the period.

1 Introduction

The traditional finance is composed of a large set of instruments facilitating exchanges and management. It relies on institutions and businesses, operating in regulated and controlled environment.

Blockchain and smart contracts allowed the release of autonomous protocol and application, operating in a verifiable way on a decentralized ledger. Decentralized Finance ("DeFi") is built using this new paradigm. Traditional financial instruments are replicated taking into relying on new premises for consistency and accountability.

Those protocols incentive their users to lend funds so that they can operate correctly (loans, leverage, etc). Users generate passive income quantified as an "annual percentage yield ("APY"). Those returns depend on 1) the utilisation of the protocols and 2) the asset composing the income and their price (i.e with liquidity mining). It is therefore subject to speculation and volatility.

The goal of APWine is to provide the DeFi yield farmers with the the ability to tokenize their yield(s) as a future, thus allowing them to hedge their risks selling it at a fixed rate in advance, and allowing others people to speculate on it.

Along with the tokenization (this protocol), APWine provide a platform to all users to trade their tokenized assets on it.

2 Architecture

2.1 DeFi loans

A major component of the Decentralized Finance is to make loans possible on-chains. They work mostly in an over-collateralized way, even though some project have been exploring other functioning (i.e. Aave[1], DyDx[2] and Uniswap[3] allow their users to leverage the particularity of the Ethereum blockchain through Flash-Loans [1]).User deposit X amount of asset A which allows him to borrow an amount Y of asset B only if less valuable, so the loan is over-collateralized. Interests are taken directly on this collateral. The collateralization of the loan can drop with the price of the collateral or with the sum of the interests withdrawn from it. To avoid a insolvency, anyone with the necessary assets (Liquidators) can can liquidate the loans before it become under-collateralized and take a predefined fee for this action.

2.2 Futures

Interests paid from/by the borrower are being shared between other actors in this economy, including the lenders. They generate an APY that depends directly from it. Sometimes protocols run a "liquidity mining campaing", where they give tokens to the users for their contribution (i.e. lender and borrower). This contributes to a higher overall APY for those lenders.

APWine allows the lenders to lock their bearing interest token for a defined amount of time against an index token that represents the yield/interests that will be generated during this amount of time.

Once the token is generated, it can be traded and all the yield collected during this time by the lended asset will be redeemable against it, minus the pool fees(see token-economics).

DeFi protocols operate in different ways to generate the yield, therefore the locking and collection of profits work differently for each lending platform. Even though, on our protocol, the same interactions will be needed for the users regardless of the platform it is lending its founds on (the only difference being the small gas cost gap for the lokcing transaction). We describe thereafter the index (token) generation process for the main platform we are building our protocol with.

2.2.1 Compound

The Compound platform[4] enable to deposit and earn interests on the deposited funds. It works with a particular token: the cToken[2]). Basically, when a user deposits a particular asset on the platform for it to be lended (i.e. Dai), they receive the corresponding cToken in exchange (in this case cDai), with an

[1] https://aave.com/
[2] https://dydx.exchange/
[3] https://uniswap.org/
[4] https://compound.finance/

exchange rate that changes at each block. The interests generated with the loan of this pool[5] are injected into the token, which value grows accordingly.

The percentage yield between two blocs b_0 and b_1, with respecting exchange rate r_0 and r_1 can be computed the following way : $((r_0 - r_1)/r_1) * 100$

To get the yield index token, the user must lock its cToken on our protocol for a defined amount of time. At the end of the period, the user will be able to get back an amount of cToken that correspond to the value of the amount of tokens he initialy deposited at the beginning. The extra cToken left is the value redeemable with the yield index token.

Exemple: A user lend 100 Dai and receive 50 cDai (exchange rate r_0 of 0.5) at a block b_0. After some time, the period expire and the Dai/cDai exchange rate is now at 0.25 (a 100% yield occurred during that amount of time). He can now withdraw 25 cDai (that now have a value of 100Dai originally deposited), and the holder of the yield token generated at the beginning can redeem 25 cDAi as well (as it correspond to the yield during that particular period).

2.2.2 Aave

2.2.3 Yearn Finance (YFI)

3 APW Token

4 Governance

The owner rights on the smart contract of the protocol are initially divided equally between the core member of the team. After a defined development period of 80 weeks, the governance of those contract will be hand over to a DAO, where the token holders can vote on the changes to be made (treasury allocation, protocol upgrade etc.). The token distribution is designed so that the community and stakeholder of the APWine platform progressively earn token that will give them a vote power on the DAO that will be realised after the initial development period.

4.1 Token allocation

A total of 1 000 000 APW are minted at the launch of the project. The are allocated with the following distribution :

- 100 000 first tokens are sold to the community through an auction, providing the team of the project with some initial capital for the development costs (gas/audit etc).
- 28 000 APW are locked for a vesting period of one 80 weeks for the core team and advisors.
- 872 000 APW are unlocked progressively on a weekly basis (for 80 weeks):

[5] https://compound.finance/markets

- 10 000 APW are allocated to liquidity mining
- 900 APW are allocated ton the team fund

4.2 Token economics

Along with the governance that those token provide, token holder are incentivised to act in a positive direction with the protocol and its development. For each future that expire, 1% of the collected yield is redistributed to the token holder, proportionally to the amount they hold. The governance mechanism of the protocol will be able to decide on a difference percentage or others rewards, depending on the market will.

References

[1] Aave – Open Source DeFi Protocol — FlashLoan.

[2] Compound — cTokens.