# An Alternative Data Oracle: Optimizing Digital Asset Securities Lending *

Lendvest Lightpaper[†]

June 9, 2022

### Abstract

We introduce a method of aggregating banking information used as high fidelity data to form a non identifying credit score for digital assets. By using this data, lending platforms would be able to create a risk framework to profile users in addition to the risk framework that is used to profile digital assets[1]. Such a credit profile would allow decentralized lending platforms to algorithmically gauge the risk profile of an individual user resulting in higher risk-adjusted returns for the platform and preferred terms[1] for the user. For financial institutions, access to this data lowers the probability of defaults, thereby lowering the risk factor in models that determine the borrowing rates and increases profit margins for securities lending. Alternatively, banks can pass along increased profit margins to their clients for a lower borrowing rate to attract more loans, grow the deposit base, and increase expected returns. We unlock siloed financial data with an off-chain zero knowledge proof paired with proven oracle infrastructure to transmit de-identified lending data between financial institutions and decentralized lending platforms. De-identified data provided by financial institutions are transmitted to an oracle network to perform a standardized credit rating.

*Keywords*: Banking, Lending, DeFi, Securities, Risk;

[1]Preferred terms may be a lower borrowing rate, a higher loan to value ratio and/ or a lower liquidation threshold

# 1 Problem

Banks are able to monetize credit spreads for only a portion of their client's digital asset portfolios; some banks seem to only offer Bitcoin as collateral[2]. However, banks are missing out on significant revenue – the rest of their clients' digital asset portfolio.Banks would be able to use their encrypted user lending data tied to customers' wallets to expand their digital asset customer's access to credit.

Regulatory and economic factors contributing to financial institutions' lack of altcoin lending products are twofold. Financial institutions, including banks, face regulatory pushback when offering decentralized lending products and services directly to customers because such institutions would be exposing their customers to counterparties that do not comply with Anti-Money Laundering and Know Your Customer regulations (AML/ KYC)[3] [4]. Additionally, decentralized platforms generally don't require users to undergo AML and KYC checks; such platforms have the advantage of aggregating liquidity on a global scale to provide more competitive rates for altcoins. Therefore, it is likely that banks do not have competitive liquidity nor regulatory support to offer altcoin-backed loans.

However, customers are allowed to access decentralized financial products and services such as decentralized lending platforms. Cornerstone digital asset regulations from the NYDFS, commonly referred to as the "BitLicense", currently hold institutional providers liable for not adhering to regulatory requirements, but not individual customers for using unregulated platforms[5]. Coinbase goes as far as teaching its users the steps necessary to use Coinbase Wallet [2] to access decentralized platforms to buy altcoins[6]. Regulators such as the SEC are aware that US consumers are using decentralized platforms, but they are unable to identify the anonymous stakeholders of these decentralized platforms to hold them liable for a lack of compliance.

The difference in regulatory treatment between digital asset related businesses and digital asset customers opens the door for regulatory data to be shared between regulated centralized platforms and unregulated decentralized platforms. Market makers can arbitrage the spread of lending and borrowing rates. Banks can use the additional lending data such as an increase in the number of

---

[2]Note: coinbase's wallet is a self custody wallet operating separately from its regulated exchange

credit lines, and an increase in the length of credit histories to more accurately depict their clients' risk profiles. With a more accurate credit risk profile, banks can profit from less defaults and more consistent interest revenue from loans.

Decentralized lending platforms do not take varying user risk profiles into account. Each user, by default has high credit risk because there is no information about individual users. Therefore, there is ample room to improve the risk profile for users. Risk profiles would enable lower borrowing rates for clients and higher profit margins for banks.

The problem for banks is clear, they are lending to digital asset customers with Bitcoin as collateral. Also, banks may not have the most competitive rates for Ethereum, and may not have the regulatory clarity to lend against other altcoins.

## 2   Solution

Banks that do not have the best rates for altcoins could still profit from their digital asset clients, by transmitting lending data to an oracle network to establish a credit score for their clients. Additionally, if banks do not have the regulatory clarity to use altcoins as collateral for their digital asset clients, they could monetize their loan data to capture a portion of the spread for these altcoins.

Clients would be able to establish creditworthiness with a purpose-built credit profile for decentralized platforms, enabling a lower risk profile and a higher loan to value ratio for their digital assets. Decentralized lending platforms would be able to create risk assessment profiles for their customers which will enable risk models based on the client instead of just risk models based on the volatility of the underlying digital asset.

## 3   Innovation

We introduce an implementation of off-chain zero knowledge proofs applied to loan data, for banking customers sent to decentralized lending platforms. It's standard for financial institutions to have de-identified data whereas the loan data is plain text and the identity of the customer is stored in ciphertext to mitigate harm in the event of a hack. Banks would broadcast anonymized credit data associated with a wallet. The data associated with a specific user's wallet would be

eligible for a preferred rate on decentralized lending platforms for assets that are not eligible to lend against through banks. Therefore, their service will enable banking customers to have access to more credit: lower borrowing rates and higher loan-to-value (LTV) ratio.

An oracle to relay lending data would be feasible because decentralized lending platforms already use Chainlink feeds for as price oracles[7]. This network of node operators would go beyond just connecting lending data from banks to decentralized lending platforms. The oracles on the network would digest various data points associated with a bank's loan data (i.e., date, collateral, amount borrowed, rate etc.) and would form a parameter for user risk frameworks. This parameter would be used as a variable to help define a user's risk profile and would act as a single API to lower the overhead of integrating multiple data points with separate APIs from each bank. Such a network would verify that the lending information belongs to a specific wallet without disclosing the wallet holder's identity. This would be achieved by connecting the wallet's transaction information with the wallet's public key used to pay taxes.

With just the user's public key, every on chain transaction is visible on the blockchain. By leveraging the same technology, when a user of a public key takes out a loan on a decentralized lending platform, that loan data would be relayed using the same oracle network. The oracle would read a transaction that signals a user has taken out a loan and could notify banks to avoid defaults associated with multiple lines of credit tied to a single portfolio[8].

# 4   Conclusion

We would begin with an API for banks to share their lending data with decentralized lending platforms to establish credit for individual users. Later, we will connect to different companies like MakerDAO and Reserve.org to enable collateralized debt position data to be used to establish credit profiles using our oracle network. We believe that credit gives people the opportunity to grow and by extending credit we are extending the limits of growth and prosperity.

# References

[1] https://docs.aave.com/risk/asset-risk/methodology

[2] http://archive.today/2023.03.02-072949/https://www.silvergate.com/solutions/digital-currency/sen-leverage.html

[3] https://blog.coinbase.com/the-sec-has-told-us-it-wants-to-sue-us-over-lend-we-have-no-idea-why-a3a1b6507009

[4] https://www.theverge.com/2021/12/9/22826888/coinbase-defi-interest-non-us-compound-lending-program

[5] https://www.skadden.com/-/media/files/publications/2018/10/the-distributed-ledger-october-2018/fn26$_d fsp200t.pdf$

[6] http://archive.today/2022.08.22-103850/https://blog.coinbase.com/coinbase-makes-it-easy-to-earn-yield-with-defi-bd38156e2715

[7] http://archive.today/2023.03.27-170114/https://docs.aave.com/risk/v/aave-v2/asset-risk/price-discovery-requirements

[8] https://www.nytimes.com/2021/04/03/business/bill-hwang-archegos.html