This is the second post in a series of two and a Twitter space to help guide the Aave community in thinking about real-world assets.

To learn more, check out the introductory forum post here:https://governance.aave.com/t/helping-aave-think-through-rwas/10684/5

Here is the first post in the series talking about why RWAs are important to DeFihttps://governance.aave.com/t/why-rwas-are-important-to-defi/10880

Check out the Twitter Space happening on 12/14 at 12pm EST/5pm GMT!

Why

Before diving further into the specifics of RWAs and how they may be incorporated into Aave, we want to briefly touch on why any of this is important.

For DeFi

We discussed this in a previous posthere.

At a high level, DeFi needs to touch off-chain economic activity to scale its TVL and bring its mission of a more transparent, permissionless, and accessible global financial ecosystem to reality.

Interestingly enough, incorporating RWA is not only good from a mission standpoint but also from a revenue diversification standpoint, as evidenced by the fact that Maker, Maker is now generating half of its protocol revenue from RWAs!

[

Maker Revenue

1172×970 73.5 KB

](https://europe1.discourse-cdn.com/business20/uploads/aave/original/2X/8/8ce74edafe3625c0f5b08f4a48cd1b4ee72fc248.jpeg)

For Aave

The recently announced GHO stablecoin will be over-collateralized by a diverse asset base. Demand for the GHO will be driven by the type of collateral and the various financial actions one can take with it.

Currently, most DeFi lending and collateral for stablecoins is based on providing margin to volatile assets. As such, activity is deeply correlated with booms and busts in the broader market, which exposes lending and stablecoin protocol to highly volatile business cycles and a risky collateral base.

Some of the consequences of only working with on-chain assets include

Levered Risk to Lending Protocol

Liquidations happen during intense bear markets where crypto assets need to be sold while everyone is selling and liquidity is drying up. When there is insufficient liquidity to cover liquidations, protocols like Maker have ended up with protocol debt.

Assets often get listed in the bull market when the risk portfolio and subsequent parameterization are skewed by excess liquidity in the market. When that liquidity dries up, such assets become vulnerable points in the lending protocols for economic attacks or liquidations.

Limited Utility

Naturally, demand derived from providing margin on crypto assets is pro-cyclical. In bear markets, such protocols have their cashflows suffer as the demand for leverage on crypto assets is significantly lower.

Red Ocean Business Model

At this stage of DeFi's ecosystem maturity, providing margin on volatile crypto assets is a competitive game with margins driven close to zero. This forces protocols to go deeper out into the risk curve to generate cashflows

On the other hand, working with RWA assets provide

Stable Assets

The volatility of real-world assets that generate cashflows from more sustainable business operations is far less than crypto native assets.

Volatility for RWAs comes from wider macroeconomic conditions, not the economic conditions of the contained crypto market.

Defaults, especially on senior secured positions, are low even during macroeconomic volatility.

[link chart to private credit default rates]

Much Larger and More Diversified Demand

RWA borrowers are not borrowing to margin trade, they are financing cashflow generating, productive, off-chain business activity. This world is orders of magnitude larger than crypto speculation.

Such demand has more consistency through bull and bear markets as these businesses need to operate to address customer needs regardless of the larger climate.

Blue Ocean Opportunity

Since RWAs are often yield-generating assets, borrowers will pay more in interest to borrow against them. Currently, DeFi rates are lower than T Bills.

Competition is much lower, the market is huge, and DeFi thus far has not made a meaningful move in financing such opportunities.

Parsing the Jargon

What is an RWA?

Real-world assets (RWAs) are tangible assets or financial primitives with the potential to serve as collateral in the DeFi industry.

Collateralized or Not

A common misnomer is that RWA lending is under-collateralized, but it isn't always. A loan that is secured by assets (including off-chain) is considered collateralized. The assets are "collateral," which is something that the lender can seize in the event of a default.

Many RWA protocols provide loans that are secured by assets. For example, loans on Goldfinch are secured by loan receivables originated by fintechs (E.g., a motorcycle financing loan to a gig economy worker in Africa.) and other company assets. The loans also benefit from guarantees from the parent companies.

The value of the collateral must exceed the loan value by a certain minimum threshold (e.g., 20%), otherwise, the loan is in default. The value of the collateral is reported on a recurring basis (e.g., monthly), allowing the lender to monitor performance and/or take action as needed.

The lenders on Goldfinch also benefit from additional covenants (e.g., maximum delinquency rates) and security from other assets owned by the fintechs, such as cash balances.

Tranching

"Tranche" originates from Old French, literally meaning "slice."

Tranching is a method used to create different investment risk profiles for an asset or basket of assets. This creates "buckets" ranging from least-risky to most-risky. The purpose is to attract a wider spectrum of investors compared to a security with a singular risk profile, thus increasing the availability of financing and asset valuation.

Many structuring mechanisms can make a tranche less risky (more "senior") than another (more "junior").

Examples:

- Priority of payment. I.e., senior tranches receive their principal back prior to junior tranches.
- Asset security
- Maturity date
- Ability for senior tranches to block payment to junior tranches (based on covenant levels)

To compensate for the higher risk, the more junior tranches receive a higher rate of return.

Terminology

The broadest differentiation of risk tranches is Equity versus Debt.

Within Debt, tranches can include Secured and Unsecured, which can then have senior and junior sub-tranches. Tranches within Secured Debt can include the First Lien and Second Lien, determined by the priority of payments.

Underwriting

Underwriting is a process through which an investor takes on risk for a return on investment. The process includes the analysis of the underlying asset, structuring, team evaluation, legal docs, pricing, etc. Given the limited upside for the typical debt investment, the underwriting process is highly focused on downside analysis and protection.

Core aspects of debt underwriting (note that applicability varies widely by deal type):

- Quality of assets
- Liquidation value versus book value
- Volatility of market prices
- Length of time and cost to liquidate
- Return profile
- Liquidation value versus book value
- Volatility of market prices
- Length of time and cost to liquidate
- Return profile
- Financial Analysis
- Historical trend analysis
- Product / segment contribution
- Working capital cycle and needs
- Evaluating company projections and downside analysis
- Historical trend analysis
- Product / segment contribution
- Working capital cycle and needs
- Evaluating company projections and downside analysis
- Capital structure
- Where does the investment fall in the priority of payment
- Amount of junior capital invested
- Value of assets/enterprise relative to investment
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- Amount of junior capital invested
- Value of assets/enterprise relative to investment
- Industry trends
- Regulatory backdrop
- Competitor analysis

- Technology risk
- Regulatory backdrop
- Competitor analysis
- Technology risk
- Customers and suppliers
- Customer retention
- Contract analysis
- Concentration metrics
- Customer credit quality
- Input price volatility
- Customer retention
- Contract analysis
- Concentration metrics
- Customer credit quality
- Input price volatility
- Structure
- Number and level of financial covenants
- Payment frequency
- Default interest, cure provisions, etc.
- Restrictions on other payments (i.e., dividends)
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- Payment frequency
- Default interest, cure provisions, etc.
- Restrictions on other payments (i.e., dividends)
- Legal
- Ensuring good standing, no undisclosed liens, etc.
- Other events of default (e.g., change of control, judgments, and other negative events)
- Evaluate enforceability (especially for emerging markets)
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- Other events of default (e.g., change of control, judgments, and other negative events)
- Evaluate enforceability (especially for emerging markets)
- Quality of management and ownership
- Management / ownership fund track record
- Ability for junior capital providers to provide additional investment
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- Ability for junior capital providers to provide additional investment

Key differences with On-Chain Assets

While there are aforementioned differences in terms of volatility and scale in RWA assets versus crypto native assets, there are a few others that are worth discussing that are especially relevant in the context of a lending protocol.

Fungible

While tokens are fungible between themselves, RWA assets are generally not. As such, there is no standardized way by which to onboard, underwrite, and price RWA assets.

Interest Flexibility

One powerful feature of crypto-collateral for stablecoins is the ability to change the interest rate as a tool for monetary policy. If Dai is trading under a dollar, the stability fee can be raised to effectively incentivize borrowers to buy Dai from the open market and close out their loans. Effectively decreasing the supply of Dai and returning it to peg.

Changing the interest rate as such for RWA borrowers isn't easy. While there are loans to traditional business that have a callable structure or variable interest rates, the majority of the real world borrowers need stability and predictability. As they are running businesses and are doing a financial calculation based on the cost of capital and expected return, dramatically changing that interest rate for the monetary policy of the stablecoin is not easy.

Borrowers need stability and predictability in the debt that they take on. Most interest rates need to be steady [if fixed] or as a spread to LIBOR/SOFR [if variable].

Liquid

Liquidating RWA in cases of non-compliance is not as easy as on-chain assets.

Most on-chain assets that are onboarded into lending protocols have deep liquidity pools that they can access to liquidate underwater debt. This is not possible for RWAs. It is worth noting, though, that one of the benefits to TradFi in using DeFi is eliminating the barriers to creating liquid secondary markets that aren't possible otherwise.

Transparency

A lender can have complete, 24/7 visibility into the behavior of on-chain assets. Naturally, loans from RWA assets are more opaque due to them servicing the needs of off-chain businesses that do not settle all their transactions on a blockchain.

Financing agreements for RWA most often include periodic reporting requirements such as internal financials, details on asset balances, management commentary on performance, and audits performed by third-party accounting firms. The specific type and scope of information reported varies on a deal or market basis.

At Goldfinch, we recognize the importance of transparency to the native crypto community and have worked towards this standard in the RWA space via the following:

- Loan documentation includes rigorous and recurring borrower reporting requirements, including audits, financials, and other covenants
- Reporting is accessible to investors via Discord-hosted data rooms which are populated directly by the borrowers
- Historical interest and principal payments are easily viewed on the borrower pool page in the Goldfinch dApp

Suggested Outline of an RWA Strategy for Aave

Here we will provide our perspective on parameterizing an RWA market. Overall, we think the most prudent strategy for Aave would be having multiple RWA facilitators, each taking on lower risk, lower yield, higher liquidity assets to start. This would include things like government bonds, and senior secured debt against strong corporate borrowers. See below for further details.

Asset Types

There will naturally be a trade-off between the safety of an asset and the yield it provides.

Aave protocol should use less risky, lower-yield RWAs to get a sense of how RWAs work in the crypto context and then incrementally explore adding riskier, higher-yield assets as it gains expertise and trust with the facilitators. Usually, the less risky and lower yield the asset, the more liquid the asset which is to the benefit of the protocol.

This looks like government bonds or over-collateralized, senior secured debt in companies with stable cashflows and operating in jurisdictions with low regulatory risk.

Asset classes should be uncorrelated with crypto markets so that they actually provide diversity versus the crypto collateral base of the stablecoin. In practice, this may mean excluding loans to market makers, miners, and other DAOs.

Debt Ceiling

When deciding the debt ceiling for RWAs, it is important to note that at the onset, we should assume all borrowers will sell GHO for fiat as it will take time to build GHO adoption in the real world.

As such, the debt ceiling assigned should be proportional to the amount of liquidity available for the GHO to be sold or redeemed for stablecoins. GHO maintaining a soft peg with the US dollar is fundamentally important to its value proposition.

In the ideal launch of this asset class as collateral within Aave, the debt ceiling should be incrementally used in reflection of:

- The total existing liquidity in GHO markets
- Any new loan issuing amount should be low enough not to cause significant dislocation in the peg.
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- Status of other loans
- As interest payments pay off the GHO-denominated loan, there will be increased buys for GHO, which may offset sales from new loans given to borrowers.
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- Monetary policy levers
- Ideally, any perturbations to the peg caused by GHO sales through RWA lending should be manageable enough by monetary policy available to the protocol, like raising the interesting rate on other asset class markets.
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At a high level, any debt ceiling applied here should be low enough that a sell-off of that proportionate amount of GHO should not cause a serious de-peg event for GHO. Any facilitator being granted a debt ceiling should do careful forecasting based on the existing loans and current liquidity before granting new loans.

Interest Rates

The current interest rate models that Aave has created for crypto collateral will not apply to RWAs.

Interest rates charged by RWA facilitators will be based on underwriting + comps for similar deals that happen in TradFi. Ideally, the governance mechanism for the facilitator model is able to guide the scope through mandates describing the risk profile of the asset and a hurdle target rate to beat.

The opportunity cost for the borrower will not be other DeFi protocols but rather TradFi lenders.

Strategic Alignment

Aave should work with facilitators and borrowers that are mission-aligned with the DeFi ethos of more transparent and accessible global financial markets.

Ideally, facilitators and end borrowers can also be gateways by which GHO can be promoted as a stablecoin for use in the real world as a currency outside of the crypto-economy.

Facilitators

It may benefit the Aave protocol to work with multiple facilitators instead of one for RWAs as a point of diversification and hedge against special interests.

Facilitators should provide reporting on the loan base as frequently as possible to provide transparency to the broader community and match the values of the DeFi industry.

Conclusion

We hope this forum post serves as a useful building block in helping the Aave community understand how RWAs can be useful, what makes RWAs different than crypto-collateral, and how it can think about those differences.

At Warbler Labs, we are committed to bridging DeFi with the real economy and to continuing to support the Aave community

in navigating that complex relationship.