"The breeding of an animal that can promise—is not this just that very paradox of a task which nature has set itself in regard to man? Is not this the very problem of man?"
- Friedrich Nietzsche, On the Genealogy of Morals, 1887

**** Part 1: A Brief History of **Credit**, From Farms to Farms ****

Five millennia ago, Sumerian farmers borrowed silver from temples to buy seeds, repaying the loans after the harvest season in silver or grain with interest. Since then, credit has served as society's **time-travel machine for money**—transforming tomorrow's value into today's cash, less a trust discount that compounds through time. When both the farmer and temple believe the seeds will be successfully harvested, there is likely to be a mutually-agreeable, *market-clearing* way to split the resulting grains into a fixed (debt) and a residual (equity) bucket. The more the temple trusts the farmer's word as to the amount of grain that the seeds will yield, the more likely there is to be a mutually-agreeable split. The trust discount can be quantified as the **cost of debt**, i.e. the annualized market return demanded to purchase a fixed amount (not share) of future profits. Whenever value can be created above the cost of debt, **credit accelerates economic growth** by 'pulling forward' the value of future events with a reasonably-high degree of certainty; both borrower and lender are better off. When the cost of debt exceeds value created, games become zero-sum; in bad harvest years, the farmer always loses and the temple sometimes does.

$$DebtToday = \frac{ValueTomorrow}{(TrustDiscount)^{Time}}$$

Blockchains are **coordination machines** that enable untrusted parties to **exchange information**, and therefore **value**, with each other **through time and space**. Blockchains create trust where there was none before, which is massively inflationary for debt. What does this mean? Anybody and everybody can be reasonably certain that [insert your favorite L1]'s ledger will be operating in more-or-less the same way in a decade, and therefore the trust discount decomposes into two parts: **onchain** events (β) that are verified and secured by the blockchain, and **offchain** events (γ) that rely on legal or social enforcement.[1] Future events that are "mostly onchain" carry far less risk - and therefore, more of their future value can be pulled forward to the present via credit - than future events that are "mostly offchain". β <<< γ, implying **credit markets grow superlinearly in size as economic activity moves onchain** ($\%_\beta$ up, $\%_\gamma$ down).[2]

$$DebtToday = \frac{ValueTomorrow}{(\beta * \%_\beta + \gamma * \%_\gamma)^{Time}}$$

This is the first of our five-part series on **onchain credit**. Sign up for our newsletter to get the rest.

- Part 1: A Brief History of Credit, From Farms to Farms
- Part 2: The Next Phase of Onchain Credit, 2025-2027
- Part 3: So You Wanna Build a Lending Business?
- Part 4: The Energy Financing Opportunity
- Part 5: DePIN Crawled so InfraFi Could Run

Special thanks to the founders of Daylight, USDai, Opacity, and Coalesce for inspiration and feedback.

[1] The onchain risk premium, β, can itself be decomposed into three risk factors: chain-level consensus failures (block reorg), dapp-level failures (smart contract hacks), and wallet-level failures (lost keys). β has declined significantly over the past three years as smart contract hacks have declined in both frequency and magnitude, and wallet & key recovery infrastructure has matured.
[2] Where $\%_\beta + \%_\gamma = 1$.

*** A Brief History of **Onchain** Credit ***

The first wave of DeFi lenders - Aave, Compound, and Sky (fka Maker) - launched pre-DeFi summer boom of 2020 with similar business models: users deposit blue chip crypto-assets into a pool and borrow (or mint) different (or the same) assets at a variable interest rate, and the protocol earns the interest spread. For these crypto-collateralized protocols, **$\%_\beta$ is high**: everything from custodying collateral, to setting interest rates, to liquidation auctions follow onchain rules enforced by validators. As a result, they support large amounts of debt relative to collateral (up to 85% LTV on blue chips). Combined, these three protocols hold $42B of collateral, support $28B of liabilities, and earn $130M in monthly interest. The average borrower pays a 5.4% rate and the average lender earns a 2.2% rate, less protocol fees.[3]

The second wave of DeFi lenders launched in 2021-2022 enabled more complex forms of onchain credit. Users with long-tail assets can borrow and lend on Morpho (isolated pools) or Euler (risk-based tranches). Users can lock in fixed rates or speculate on variable rates on Pendle, and those with assets on Solana can use Kamino. While yields on first wave DeFi lenders have compressed to single digits, this second wave enables looping strategies (discussed below) that can generate double-digit yields. Together, these four protocols hold $17B of collateral, support $6B of liabilities, and earn $45M in monthly interest. The average borrower pays a 8.4% rate and the average lender earns a 2.3% rate, less protocol fees.

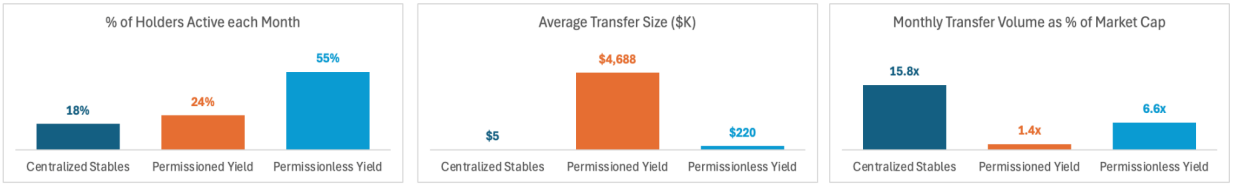
The first wave of real world asset (RWA) credit protocols spun up around the same time, tokenizing all sorts of debt instruments. Everything from US treasuries (Ondo), EM treasuries (Libeara), munis (Onyx), corporate bonds (Cashlink), public credit (Securitize), CLOs (Centrifuge) HELOCs (Figure), royalties (Titlepool), and private credit (Tradeable) are all available “onchain”. On its face, these protocols have $30B of liabilities - bigger than the categories above - but with an important caveat: **they all require permission to use**, **and US retail (unaccredited) investors are not welcome**. These yields cannot be accessed without registering for an account and completing KYB/KYC processes, even with a VPN, which makes them about as decentralized as Circle and Tether. But the reality is actually worse: unlike USDC and USDT, these yield-bearing stablecoins (we call them “yieldcoins”) cannot be traded onchain, and are therefore not composable with DeFi.[4] So while there are $30B of liabilities “onchain”, they are not really onchain in any meaningful sense: none of the collateral or lending operations are secured by the chain. Since $\%_\beta$ is low, there is **little-to-no growth in credit markets unlocked by permissioned RWAs**.[5]

The primary reason for blocking US retail users from trading these assets is **compliance** with the Securities Act of 1933, which requires securities to be registered and transferred pursuant to specific exemptions, and the Securities & Exchange Act of 1934, which bans brokers, dealers, exchanges from trading securities on platforms besides registered exchanges, or - since 1998 - alternative trading systems under Reg ATS.[6] Both exchanges and ATSs have strict compliance requirements, including:

- **KYC and AML:** verifying the identity and source of funds of every trader on the platform.
- **Record keeping:** maintaining specific records and making them available to the SEC & FINRA.
- **Spreads:** trades must clear at a price equal or better to live quotes on registered exchanges.
- **Tick sizes:** minimum tick size of $0.01, or $0.0001 for securities quoted below $1.
- **Infrastructure:** working with regulated transfer agents, clearing agencies, and broker-dealers.

[3] Rates are blended across all types of assets, i.e. stablecoins, native cryptoassets, and (to a lesser extent) RWAs.
[4] Notable exceptions are Ondo’s USDY, which trades permissionlessly on Orca, and Ethena’s USDTb, which trades on Curve.
[5] Take Goldfinch for example: while the protocol “tokenized” private credit, it ultimately resorted to legal recourse in the case of default. Blockchain validators could not do anything to get lenders their money back, therefore no new trust (credit) was created.
[6] There are roughly 15 national exchanges and 45 alternative trading systems registered with the SEC today.

DEXs like Uniswap or Jupiter fulfill none of the above requirements, which makes trading securities on them likely a violation of the Exchange Act for US persons. Instead, **RWA transfers today are limited to institutions** in one of two ways. The first is **registering or acquiring an ATS and transfer agent**, which was done by Securitize in 2020, Figure in 2021, Ondo in 2025. This allows for true trading of tokenized securities, albeit with the compliance overhead that comes with being a traditional ATS. The second path, by Superstate, allows for **issuer-controlled transfers** of tokenized securities between whitelisted wallets, but not onchain price discovery. Superstate itself is the issuer. In other words, institutions can *transfer*, but not *trade* onchain. Compared to **centralized stablecoins**, the average transfer for **permissioned yield** protocols is 1000x larger, but velocity - volume as a % of market cap - is 1/10th that of stablecoins.



Centralized stablecoins: USDT & USDC. Permissioned Yield: BUIDL, USTB, & OUSG. Permissionless Yield: USDe & syrupUSDC.

The most interesting DeFi apps of this cycle have come out of the right category, **permissionless yield**, pioneered by Ethena and Maple. Combined, these protocols have grown from zero to $10B of onchain liabilities in less than two years and earn $38M in monthly interest. They generate yield in different ways: Ethena takes **counterparty risk crypto exchanges** by farming the basis trade (long spot, short perps) on blue chip cryptoassets, while Maple takes **price and custody risk on blue chips** by issuing crypto-overcollateralized loans to trading firms and market makers. Both have internal teams that mitigate risk through institutional-grade underwriting, offchain insurance-like agreements, and backstop reserve pools. Ethena pays a 4.6% yield on stablecoins today and Maple pays 5.9%, both before incentives.

Unlike the permissioned yield products previously discussed, **anyone can buy or mint** Ethena's USDe and Maple's syrupUSDC onchain. Americans are ostensibly blocked via IP address tracking, but in practice many (most?) users spoof location with VPNs. The US regulatory status of these permissionless yieldcoins is somewhat up for interpretation. A reasonable argument can be made that yieldcoins should be considered either securities or commodities under current laws, or that regulators will create entirely new frameworks that cover yieldcoins and similar protocols. If they are considered securities, some combination of yieldcoin protocols, exchanges, and wallets will be held responsible for monitoring and enforcing existing securities trading regulations. If they are considered commodities, spot trading is largely unregulated (besides anti-fraud and anti-manipulation statutes) and a clear path exists for building regulated derivatives products on top. We may not know the outcome for a while, given both the GENIUS bill (signed July 2025) and the CLARITY act (currently awaiting Senate approval) explicitly exempt yield-bearing stablecoins from their purview. At EV3, our view is that **yieldcoins need not, and should not, be regulated as securities or commodities**: designed correctly, the cryptoasset itself has zero legal claim over the underlying assets or legal claims against any issuer, but instead accrues yield through smart contract code enforced by the consensus mechanism of a permissionless public blockchain.

Regardless of their regulatory status, permissionless yieldcoins have proven to be a massive hit with users. While not as flashy as perpetual futures or prediction markets, we would argue **stablecoin looping is one of the top-3 breakout use cases** of the cycle. Looping leverages DeFi composability to stack and multiple sources of yield, and risk, on top of each other—effectively parlays for yields. Veteran yield farmers spent the cycle building monitoring, execution, and risk management tools specifically for sophisticated recursive looping strategies to extend - and sometimes overextend - the chase for yield.

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Here's an example stablecoin looping strategy:

	Strategy	Risks	Yield
1st Loop	Deposit USDC, mint USDe, and stake for sUSDe on Ethena	Smart contract hack, exchange insolvency, bad hedges	4.1%
	Deposit sUSDe for variable yield PT-sUSDe on Pendle	Smart contract hack perps funding rates, duration	6.3% (+220bps)
	Deposit PT-sUSDe as collateral and borrow USDC on Aave	Smart contract hack, redemptions → yieldcoin depegs → liquidation	N/A (0.05% LTV)
2nd Loop	Deposit borrowed USDC back into Ethena for more sUSDe	Same as above, with leverage	6.5% (+20bps)
	Deposit new sUSDe into Pendle for more PT-sUSDe	Same as above, with leverage	6.6% (+10bps)
	Deposit new PT-sUSDe back into Aave as collateral	Same as above, with leverage	N/A (0.05% LTV)
nth Loop	***Repeat ad infinitum***		

These loops can go on recursively, boosting yields to multiples of the raw un-looped yield before gas fees become prohibitively expensive. The uplift is relatively modest in the example above because Aave allows for only 5% LTV on PT-sUSDe; other platforms & assets support far more leverage. While the total capital currently in looping strategies is unclear, it is a massive part of stablecoin DeFi activity.[7] Chaos Labs estimates over $20B currently held in vaults controlled by risk curators and onchain hedge funds.

The true amount of leverage in the looping complex is even bigger and more complex than what one sees onchain. Behind the scenes, yieldcoin protocols structure insurance-like agreements with or against large counterparties to protect against their specific flavor of tail risk. If you're farming the basis trade on exchanges, you negotiate anti-ADL deals to effectively move up the exchange's preference stack (above other traders) with respect to the liquidation engine, and you'd likely also buy CDS-like structured products that pay out in case of exchange bankruptcy. If you're farming "onchain hedge funds" (read: non-autonomous DeFi vaults), you might negotiate full or instant redemption rights with vault managers to ensure you can get your money out before other depositors. If you're looping long-tail cryptoassets at high leverage, you might negotiate deals with vault curators to delay or otherwise soften liquidations in times of market stress. These side deals are widespread across the crypto industry and form a complex web of leverage that isn't evident when you look at the headline figures; they only come out of the woodwork in times of market stress. Oftentimes, they can make onchain activity in isolation look irrational.

In short, the brief history of crypto lending is:

1. **DeFi lending v1** (Aave, Compound, Sky) = crypto-collateralized lending, **high $\%_{\beta}$**.
2. **DeFi lending v2** (Morpho, Euler, Pendle) = crypto-collateralized structured lending, **high $\%_{\beta}$**.
3. **Permissioned yield** (Securitize, Superstate, Ondo) = institutional only, **low $\%_{\beta}$**.
4. **Permissionless yield** (Ethena, Maple, Neutrl) = institutional and retail, **medium $\%_{\beta}$**.
5. **Looping** = combines the four strategies above for **compounded, composable yields** onchain.
6. **Shadow leverage** emerges from a complex web of offchain, undisclosed financial agreements.

[7] For permissionless yield, 45% of Ethena's USDe is deposited as collateral in Aave and 55% of Maple's syrupUSDC is deposited as collateral in Sky (Spark). For permissioned yield, 10% of Centrifuge's JTRSY is deposited in Aave's institutional platform, Horizon.

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*** November 2025 Update ***

Since we initially wrote this letter, onchain credit went through a market shock. At 10AM ET on October 10th, news outlets began reporting President Trump's announcement of 100% tariffs on China. By the close of US trading the S&P 500 had fallen by -3%, and by 7PM crypto market cap was down -12%. The tariff announcement spurred a wave of selling that caused, and then was reflexively reinforced, by $19+ of liquidations of levered traders ($17B long, $2B short)—the biggest such event in crypto history.

You might be wondering, if token prices fell, why were *shorts* liquidated? Many traders found themselves asking the same question on October 10th after seeing the acronym ADL - short for anti-deleveraging - pop up on their trading terminals. ADL is a safety mechanism implemented by crypto perpetual futures exchanges as a last resort when orderbooks are unbalanced. At a high level, if you have a levered short position in $XYZ, then other traders on the platform must have an equal-sized levered long position. As the price of $XYZ falls, traders who are long get liquidated, and their collateral is seized and redistributed to you in the form of trading profits. Once all the longs have been liquidated, if price continues falling, your short is technically further in the money, but there is no more collateral available to pay you the winnings. Instead of letting this happen, the exchange closes your short position for you, effectively capping profits.

If you had **speculative short** exposure on crypto going into 10/10, the consequences weren't too bad: instead of making [4]x your money on a levered short, the exchange ADL'd you and capped profits at [3]x. But many crypto market makers went into 10/10 thinking they had **delta-neutral** exposure, i.e. unexposed to crypto spot prices, for example by buying tokens on a spot exchange and shorting (with leverage) the equivalent amount of tokens on a perps exchange. On 10/10, the short leg was auto-closed on perps exchanges, but there was not enough liquidity for market makers to sell their corresponding spot long positions. The past month has seen alts market cap bleed out as market makers clean up their books and liquidate long positions that they previously - but no longer - consider hedgeable.

If you read our letters, the cascade was not a total surprise. A week prior, we published our Q3'25 update:

> *"The flipside of hyper-growth is 1) yields for any individual strategy compress faster, and 2) systemic risk across the entire system builds up faster than in TradFi. As spreads compress, 'hot' (levered) capital rotates out of one strategy to seek higher-yielding opportunities elsewhere or simply closes their position. In the case of crypto-collateralized stablecoins like Ethena, this reduces the value of the underlying collateral backing, which in turn reduces the market cap of the native token, the most junior tranche in the cap stack.* ***The tail risk scenario is a Terra-like bank run where the 'stablecoin' depegs in the face of mass redemptions*** *while its collateral token faces a hyper-inflationary spiral. There are now better liquidation safeguards in place than in 2022, but at the same time the number of stablecoins has grown from dozens back then to 170+ today. These are fragmented across exchanges, blockchains, and money markets, each with its own liquidity chokepoints, like a* ***set of dominos where breaching a key level in one stablecoin can set off a chain reaction of programmatic liquidations*** *across crypto. In the past, these downward reflexive liquidation cascades have been capable of driving* ***double-digit declines in aggregate crypto market cap****… A* ***high-value smart contract hack in 2025****, especially after several years of declining losses, would be even more likely to cause an exogenous shock on onchain cost of capital and trigger* ***systemic deleveraging*** *across crypto."*

All of this came true. The biggest yieldcoin by market cap, Ethena's sUSDe, temporarily depegged on secondary markets and traded as low as $0.65 on Binance. Many smaller yieldcoins including Stream's xUSD, Elixir's deUSD, and Stable Lab's USDx depegged permanently and are now in process of shutting down. Lending markets where these yieldcoins were used as collateral froze withdrawals in order to prevent contagion into other pools. Since 10/10, aggregate crypto market cap has fallen by -20%

Could it all have been prevented? In the rest of the series, we discuss ***RWA looping*** and the emerging trend of yieldcoins powered by real-world (non-crypto-correlated) lending products.

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