



Resurrecting The Saver: Walking Tall With Anchor

The DeFi Standard For Crypto-Native Fixed Income



March 16, 2021

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Executive Summary

The macro storm of quantitative easing and record low interest rates has depressed yields in traditional finance beyond measure. Anchor is the first protocol in Decentralized Finance (DeFi) designed to capture the growth of the cryptocurrency ecosystem to offer savers fixed income yield.

The Anchor Protocol is a money market built on the Terra blockchain, leveraging the only stream of unlevered, reliable yield in cryptocurrency: Proof-of-Stake (PoS) block rewards. Anchor synthesises DeFi yield with PoS rewards, creating a fundamentally new economic primitive – the Anchor Rate – providing lenders a stable rate of return. In time, we believe the Anchor Rate will become the reference rate for DeFi investment – a Decentralized Funds Rate – and eventually *the gold standard for passive income on the blockchain*.

Anchor launches with LUNA as the initial primary collateral asset for borrowers, with a roadmap to integrate other PoS assets including DOT, ATOM and SOL, and decentralize ownership of the ANC governance token through a liquidity mining program.

THE PLEASURE OF WALKING TALL

Your savings, believe it or not, affect the way you stand, the way you walk, the tone of your voice. In short, your physical well-being and self-confidence.

A man without savings is always running. He must. He must take the first job offered, or nearly so. He sits nervously on life's chairs because any small emergency throws him into the hands of others.

Without savings, a man must be too grateful. Gratitude is a fine thing in its place. But a constant state of gratitude is a horrible place in which to live.

A man with savings can walk tall. He may appraise opportunities in a relaxed way, have time for judicious estimates and not be rushed by economic necessity.

A man with savings can afford to resign from his job, if his principles so dictate. And for this reason he'll never need to do so. A man who can afford to quit is much more useful to his company, and therefore more promotable. He can afford to give his company the benefits of his most candid judgments.

A man always concerned about necessities, such as food and rent, can't afford to think in long-range career terms. He must dart to the most immediate opportunity for ready cash. Without savings, he will spend a lifetime of darting, dodging.

A man with savings can afford the wonderful privilege of being generous in family or neighborhood emergencies. He can take a level stare into the eyes of any man . . . friend, stranger or enemy. It shapes his personality and character.

The ability to save has nothing to do with the size of income. Many high-income people, who spend it all, are on a treadmill, darting through life like minnows.

The dean of American bankers, J.P. Morgan, once advised a young broker, "Take waste out of your spending; you'll drive the haste out of your life."

Will Rogers put it this way, "I'd rather have the company of a janitor, living on what he earned last year . . . than an actor spending what he'll earn next year."

If you don't need money for college, a home or retirement then save for self-confidence. The state of your savings does have a lot to do with how tall you walk.



FIRST FEDERAL SAVINGS

AND LOAN ASSOCIATION OF ST. PETERSBURG

*"The Pleasure of Walking Tall", an ode to the saver
and First Federal Savings advertisement from 1963.*

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Introduction

The modern saver is entering the final throes of a half-century decline at the hands of central bank magic. The demise of the saver is the same story as the death of fixed income, the sprint toward currency devaluation and the ultimate birth of crypto.

Yet the central banker may be running out of options. Their unstoppable, half-century rise is headed for climax. Central banks are beginning to face the ultimate double bind: destroy the currency or destroy the asset bubble. Tragically for the already-beaten saver, neither scenario protects their purchasing power, likely leading to a deep and painful economic reset.

Just as central bankers launched the first wave of quantitative easing, Bitcoin emerged as salvation for the saver. Its narratives have evolved over the years but ultimately converge on one foundational theme: the defense of purchasing power.

Bitcoin's success has also inspired a golden age of crypto-finance. DeFi is rethinking every corner of modern markets from trading to yield-generation. DeFi represents a new era of finance where losses cannot be socialized and yield is not conjured by central banks, but by markets free from intervention.

A new frontier in crypto fixed income may be looming, but it's not clear that mainstream users will embrace the DeFi of today. DeFi yield is inherently levered yield. It is highly erratic, volatile and tied to short term debt cycles. DeFi yield is fragmented, unintuitive and yet to converge on a stable reference rate akin to the Federal Funds Rate.

Built on the Terra blockchain, Anchor presents a viable path to crypto-native fixed income. By marrying the innovations of DeFi money markets with a stable source of yield through PoS block subsidies, Anchor is the bridge between mainstream savers and crypto-native yield. It is a market for interest rates tied to crypto's long term debt cycles. In our view, Anchor may ultimately become the foundation for a Decentralized Federal Funds rate, a crypto-native yield curve and a reference rate for risk-free investing.

This report will be broken up into three sections:

PART I: THE END OF THE SAVER & UNSTOPPABLE RISE OF CENTRAL BANKING

In the first section, we tell the untold story of the saver's demise and the parallel, unstoppable rise of central banks. Unfortunately for central banks, their power may be nearing its crescendo, as they approach the end-game of a half-century run. Central banks are approaching the ultimate double bind, and tragically for savers, both outcomes may be catastrophic.

PART II: SALVATION OF THE SAVER, IS CRYPTO READY FOR FIXED INCOME?

In the second section, we describe the parallel and almost serendipitous rise of crypto. We begin by detailing Bitcoin as the Austrian moment as well as the powerful rise of DeFi. We argue that DeFi is an opportunity to reimagine money markets and fixed income, but that the DeFi of today is largely unsuited for the mainstream saver: volatile, levered, fragmented and filled with idiosyncratic risk.

PART III: ANCHOR, DEFI'S RISK-FREE RATE & THE STRIPE FOR SAVINGS

In the third and final section, we review Anchor, a new bridge between the mainstream saver and crypto-native yield marrying DeFi money markets with PoS block subsidies. We introduce the idea of a Decentralised Funds Rate and Anchor as crypto's risk-free rate of return. Anchor's unique design opens possibilities for a mainstream moment in the crypto savings account. We conclude by imagining how Anchor could lead to a crypto-native yield curve, redesign portfolio management and drive mass adoption as crypto's *Stripe for Savings*.

1 The End Of The Saver & Unstoppable Rise Of Central Banking

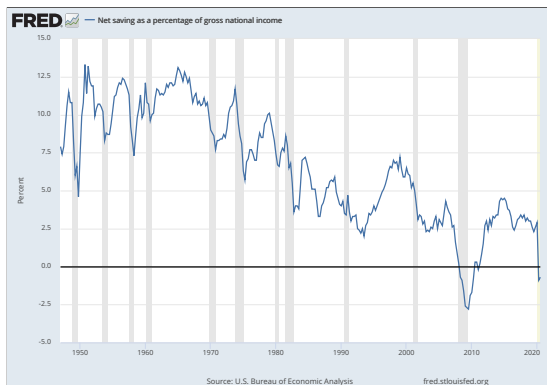
1.1 Nixon's Capitulation & The Saver's Demise

The plight of the saver is one of the most overlooked stories in modern finance. The tale begins as Nixon laid the final blow to the Gold Standard in 1971. Gold's end marked the beginning of unfettered fiat and total victory for an economic orthodoxy that downplayed the saver and lionized the consumer. This new orthodoxy took many forms over the coming decades but one strain of thought would remain: the saver was no longer at the heart of capital accumulation.

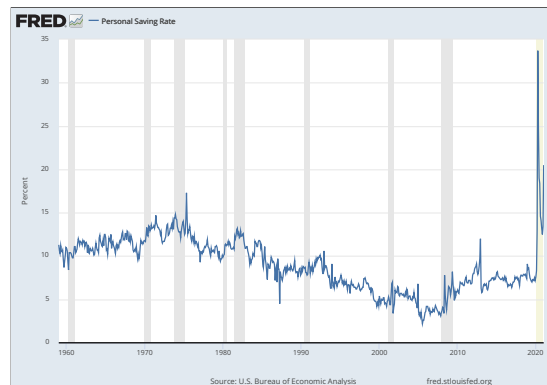
Nixon marked this turning point in the saver's decline with a famous capitulation to the Keynesian worldview, a school of economics gaining powerful traction amidst post-war reconstruction: "We are all Keynesians now".

Savers were once the prized engine of economic growth. This was not just amongst economists, but embedded deep in the culture: society revered the saver as the glue of prudence and skin-in-the-game, diligently keeping the system alive and virtuous.

Net savings as a percentage of gross national income (GNI) have been on a downward trajectory since the late 1960s, climaxing in a *negative rate* of -0.7% in Q3 2020, as per Figure 1a. While savings as a proportion of GNI approach a 70 year low, nominal personal savings rates have actually risen since 2008, momentarily soaring to 33% during COVID, as per Figure 1b. How can savings rates climb while purchasing power dwindles?



(a) US net saving as a % of GNI from the late 1940s¹.



(b) US personal savings rate from the late 1950s².

Figure 1: US macroeconomic savings statistics.

This statistic captures the saver's insidious decline: just as personal savings skyrocketed this year, M2 money supply grew by over 20%, captured by Figure 2.

Spikes in personal savings hide the dilution of the US household, which represents a smaller portion of the growing pie when factoring changes in money supply and asset prices.

Fifty years from Nixon's capitulation and savers have not just lost their status as stewards of capital

¹URL: <https://fred.stlouisfed.org/series/W207RC1Q156SBEA/>.

²URL: <https://fred.stlouisfed.org/series/PSAVERT/>.

³URL: <https://fred.stlouisfed.org/series/M2SL/>.

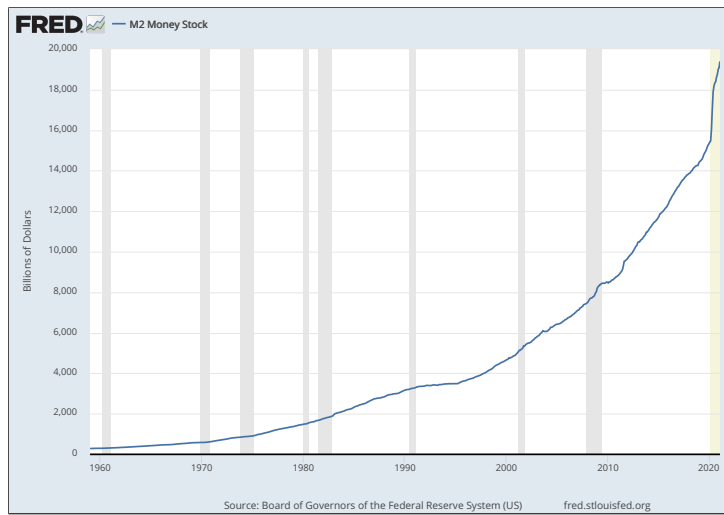


Figure 2: Historical M2 money supply from the early 1960s to today³.

accumulation, they have been replaced by a new class of economic magicians: central bankers. Interest rates are no longer the hurdle rate for investment, but an extension of the central banker's wand, liquidity. Captured by the paradox of thrift, the dark art of modern interventionism reframes the saver as an economic destroyer, a menacing force standing in the way of effective counter-cyclical policy.

Ultimately, the saver's demise is captured by the forty year bear market in treasury yields, shown in Figure 3. Short and long term US treasuries served as the reference rate for risk-free investing since the 19th century, netting anywhere from 13 – 15% even in the early 1980s. Today's returns have shrunk to less than 0.2 – 0.3%. When accounting for CPI, real yields are trending toward zero, and, with a hint of insult to injury, wheeze their way into negative territory for shorter term maturities.

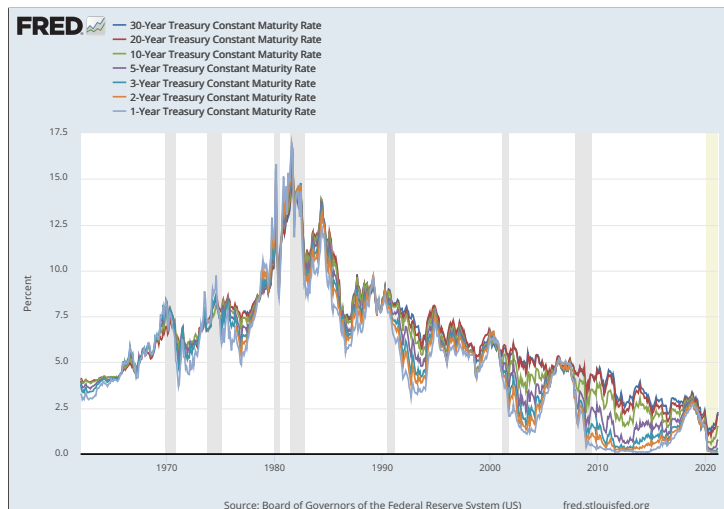


Figure 3: Historical US Treasury Bond yields across a range of maturities from the early 1960s to today⁴.

⁴URL: <https://fred.stlouisfed.org/series/DGS30/>.

1.2 Central Banks Are The Capital Markets

Capital markets no longer reflect the organic cycle of savings, investment and capital accumulation. The “natural” business cycle is dead. Following Nixon’s surrender to Keynes and especially following the era of the Greenspan Put, central banks are the capital markets. They have morphed from lenders of last resort and an insurance policy on bank-runs into the ultimate hedge fund. They are the market’s watchmen, the wizards who summon the business cycle from towers above.

There is one obsession that guides the modern central banker: preventing deleveraging events at all costs and maintaining the eternal allure of market stability.

To this end, the Fed’s most important weapon is the Federal Funds Rate (FFR), the borrowing rate for overnight loans. These short term rates set expectations for long term rates. As per Figure 4, today’s FFR stands at a meager 2.5%, down from a peak of 18% in the early 1980s. Pushing rates down and keeping them low is how central bankers became the stewards of the business cycle, replacing the saver and disguising interest rate manipulation as orderly intervention in the name of market health.

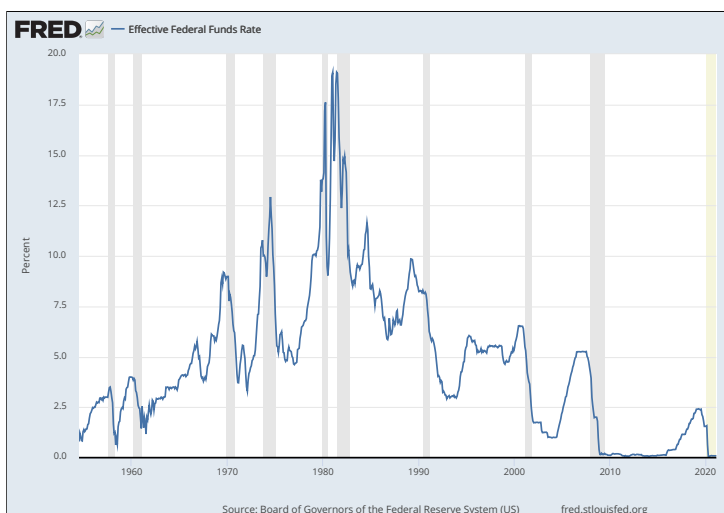


Figure 4: Historical US Federal Funds Rate (FFR) from the 1950s to today⁵.

Stripping away the complicated economic jargon, central bankers have become the market’s ultimate punter. They speculate on asset prices, rushing to address the public on any hint of volatility with soothing webinars and television interviews – right before the blizzard of liquidity.

This regime of unchecked central banking has crushed the ordinary saver, deified the debt-craving consumer and spawned a hydra of market dysfunctions.

1.3 The Dysfunctions Of Modern Markets, Five Micro Bubbles

1.3.1 Speculative Fever

Firstly, central banking forces the economy into speculation. The ordinary person can’t maintain purchasing power through work ethic and saving. The piggy bank (let alone the savings account) is a dying economic icon.

⁵URL: <https://fred.stlouisfed.org/series/FEDFUNDS/>.

In the fight against declining real wages, economic participants must submit to the central banker's shrine and enter the speculator's arena. Today, most people have no choice: contend with asset bubbles of all-kinds or face the horror of sitting in dwindling cash. Central banks have forced the ordinary saver to become, like them, a punter in endless property cycles and horse-picker in the stock market casino.

1.3.2 Investing Dogma

Stemming from this low-yield environment, speculative norms permeate society in subtle ways. Take, for instance, the dogmas of modern investing. Passive investing emerged in a world where central banks are committed to suppressing volatility. The strategy mirrors both the central banker's put option ("markets only go up") as well as the ordinary saver's yield-starvation ("time in the market is better than timing the market").

1.3.3 The Cantillon Effect & Financial Socialism

Moreover, central banking has hatched an extreme Cantillon effect: those closest to the machinations of the money supply are those who reap its rewards. Instead of encouraging the saver, modern markets favor the financial class. An endless army of money managers, analysts, accountants, lawyers and pundits fight to extract value from the liquidity machine.

Markets wake with terror at every utterance of the Fed Chairman and analysts rush to dissect every word of FOMC minutes. Angered by this Cantillon effect and watching their purchasing power eviscerate, the public will often voice a brief rage – only to be calmed by the pundit's story of financial stability. So it goes: *deleveraging is more painful than socializing the losses of the bankers, hedge funds and financial elite.*

1.3.4 The Fragility Of "Risk-Free" Trades: Long Bonds, Short Yield

The bear market in treasury yields mirrors the bull market in bonds. Declining interest rates elevated the "Levered Long Bond" trade into one of the most successful risk-adjusted strategies over the past fifty years. Falling rates birthed the "Risk Parity" approach to asset allocation, using leverage to equalize risk contributions within a portfolio. In the example in Figure 5, a leveraged long bond portfolio produced similar returns to the S&P500 with less than half the maximum drawdown. Why own equities when a "safe" leveraged bond portfolio can replicate their returns with "less risk"?

Central bank liquidity lulls hedge funds into "risk-free" trades and entices leverage based on historical returns. March 2020 exposed the fragility of this strategy: correlations soared to one and equities sold off *alongside* bonds – something that *isn't supposed to happen* according to Risk Parity. Forced to unwind positions, Risk Parity funds suffered amplified losses. These dynamics are illustrated in Figure 6.

Ultimately, trades like Risk Parity hide behind central banks. They can only exist in a system committed to socializing losses through aggressive, cheap and accessible liquidity.

⁶URL: <https://www.advisorperspectives.com/articles/2018/08/13/the-case-for-leveraged-u-s-treasury-bonds>.

⁷URL: <https://www.ft.com/content/ea6f3104-eeec-466a-a082-76ae78d430fd>.

⁸URL: <https://www.bloomberg.com/news/articles/2020-03-19/enormous-de-leveraging-in-bond-market-smacks-of-margin-call-rush>.

⁹URL: <https://www.ft.com/content/4d5cac08-69f1-11ea-800d-da70cff6e4d3>.

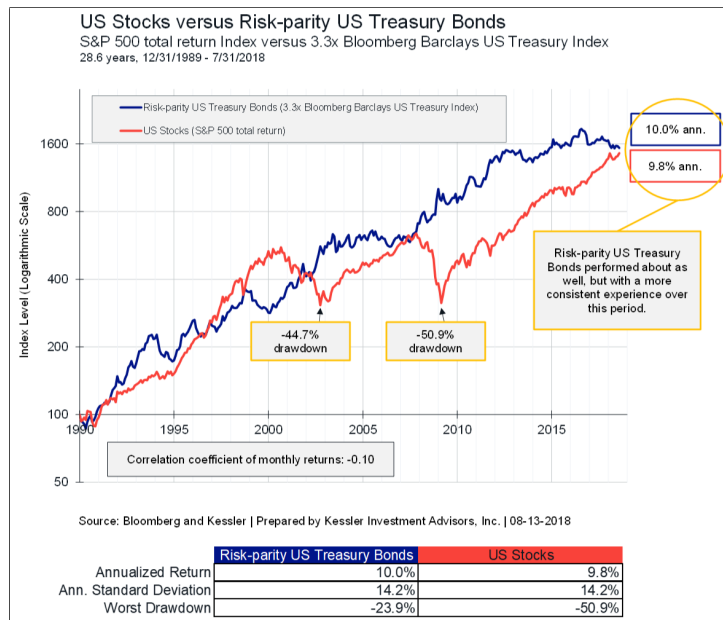
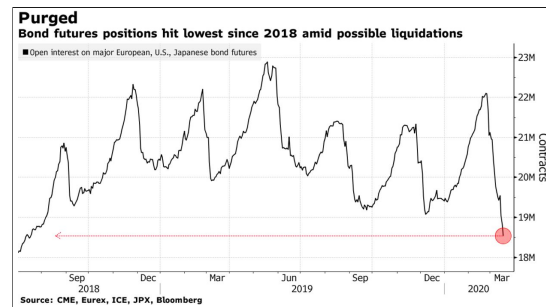


Figure 5: Demonstrating the historical equivalency of unlevered exposure to the S&P 500 and a 3.3x levered bond portfolio⁶. The bond portfolio provided the same return, with significantly lower volatility.



(a) US Treasury Bond futures basis expansion⁷.



(b) US Treasury Bond futures open interest collapse⁸.



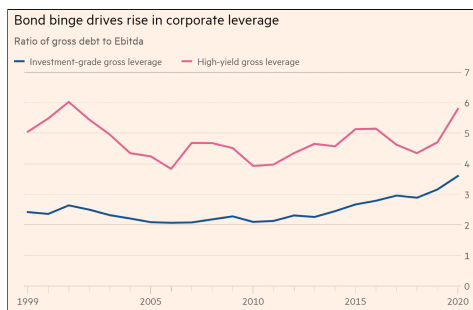
(c) The deleveraging of Risk Parity funds⁹.

Figure 6: The sell off in US Treasury Bond market sparked by COVID19 lead to dislocations in the futures market for treasuries and delevered Risk Parity funds.

1.3.5 Corporate Zombies & Mandatory Buybacks

Corporations are yet another victim of central bank largess. They are forced into the spectacle of the quarterly beauty pageant. Executives balloon company debt and prioritize short term growth over long term value creation because the markets incentivize them to do so. CEOs must please the shareholder at all costs, submitting to the almost-mandatory buyback and driving value into the speculator's arena.

Today, corporate debt as a percentage of GDP is at all time highs. Interest expenditures dwarf profits for 15% of US small caps, a sector stuck in zombieland. Average corporate leverage ratios are steadily approaching the highest recorded levels since the Dot Com Bubble. These historical trends are shown in Figure 7.



(a) US corporate leverage levels¹⁰.



(b) Percentage of US small cap “zombie corporations”¹¹.



(c) Corporate debt to GDP ratio¹².

Figure 7: The US corporate debt bubble.

1.4 The Central Banker's Double Bind: Destroy The Currency Or Destroy The Asset Bubble

The system refuses to allow deleveraging events as they would spiral the Micro Bubbles into catastrophe. The system is thus inherently short-volatility. It presumes the central bank's continued control over the currency, business cycle and financial markets. Shorting volatility to collect a steady premium is a trade that works until it doesn't. So how does this ultimately end?

How does a fifty-year trend – the post-Nixon demise of the saver and the unstoppable rise of the central banker – reach its ultimate climax?

¹⁰URL: <https://www.ft.com/content/7fa7e230-5a8f-4a65-b8b7-ecd603a2a3d1>.

¹¹URL: <https://www.ft.com/content/7fa7e230-5a8f-4a65-b8b7-ecd603a2a3d1>.

¹²URL: <https://www.dallasfed.org/research/economics/2019/0305.aspx>.

As with most market moves, it won't end in a peaceful transition, but in a squeeze. It finds its end in a dramatic regime shift and forced deleveraging, regardless of the central bank's wishes.

The monetary authorities are caught in an incredible double bind. With rates close to zero, they are running out of options. Central banks must choose between two compromising worlds, each as violent and painful as the other.

They can flood the system with liquidity and keep interest rates low, waging war on any spike in treasury yields by controlling the yield curve (YCC), as per Figure 8. This first option – an uncompromising commitment to the fifty year status quo – risks runaway inflation and possibly even hyperinflation in the long run.

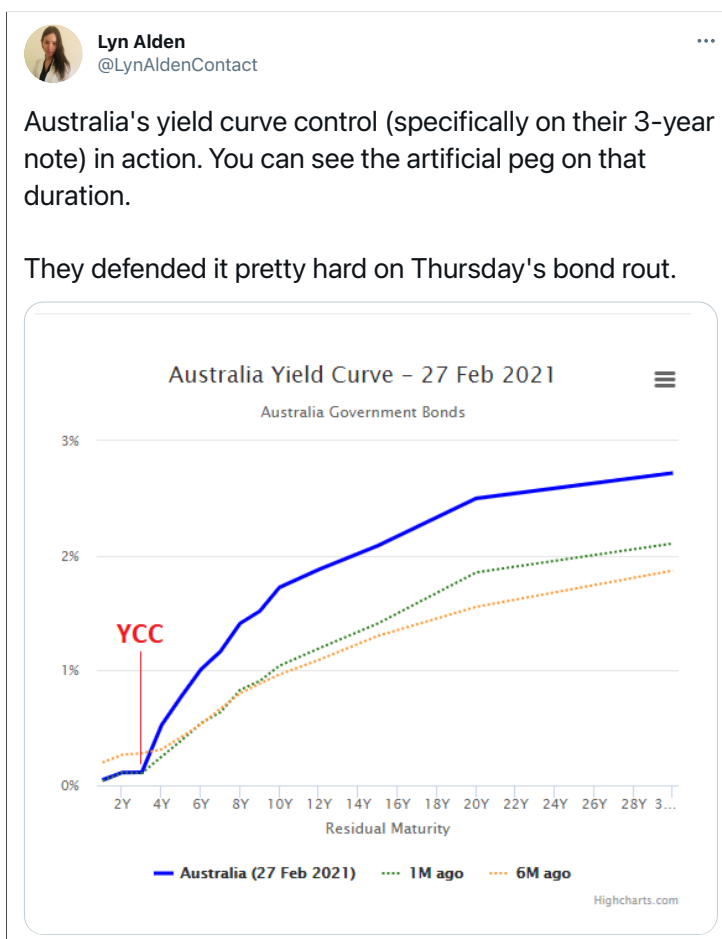


Figure 8: Visualising Yield Curve Control (YCC) in the Australian Yield Curve¹³.

On the other hand, they can raise rates and reject extreme measures like YCC. A hawkish stance takes away the medicine and risks deleveraging an economy reliant on cheap leverage. This second option pricks the asset bubble, unwinds the Five Micro Bubbles and leads to a deep, painful recession.

Choose between destroying the currency or destroying the asset bubble, the central banker's double bind. Willingly or unwillingly, authorities will find it increasingly difficult to salvage the system without a painful squeeze. The Keynesian fight against deleveraging must face its own deleveraging, as central

¹³URL: <https://twitter.com/LynAldenContact/status/1365492919600353280>.

banks hurtle toward two binary yet equally destructive worlds.

1.4.1 Cracks Emerge

There are already signs that central banks are losing grip. As we described in our previous report [The Standard for Synthetic Assets: Mirror](#), COVID19 forced central bankers into an awkward predicament.

Looming fears of societal meltdown lead to the single fastest crash in US equities since 1987's Black Monday. Rushing to meet margin calls, portfolio managers turned to what they thought was the world's most liquid asset: US treasuries.

They were wrong. Something peculiar took place. As they slammed the bid, a sudden chaos took hold. The market stopped functioning altogether: buyers of the world's most liquid asset were nowhere to be seen as bid-ask spreads soared and market makers disappeared.

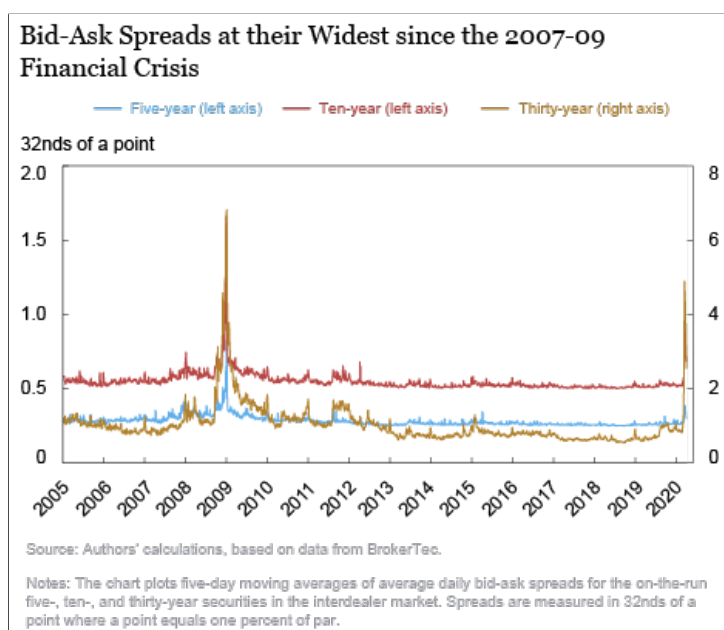


Figure 9: Historical bid-ask spreads of 5, 10 and 30 year US Treasury Bonds¹⁴.

The Fed had no choice. They did the only thing they could: step in as the buyer of last resort. The Fed slashed bank reserve requirements to zero and cut the FFR by almost 2%. Figure 10 outlines the timeline of this burst in emergency policy.

Squeezed by the market, the Fed launched the single largest money printing program in human history.

Less than a year from the 2020 carnage, the market again quietly tips their hand. As vaccine rollouts begin, hopes of an economic recovery put upward pressure on treasury yields. The market expects cyclical inflation, bidding up US 10 Year Treasury Yields.

¹⁴URL: <https://libertystreeteconomics.newyorkfed.org/2020/04/treasury-market-liquidity-during-the-covid-19-crisis.html>.

¹⁵URL: <https://www.ft.com/content/ea6f3104-eeec-466a-a082-76ae78d430fd>.

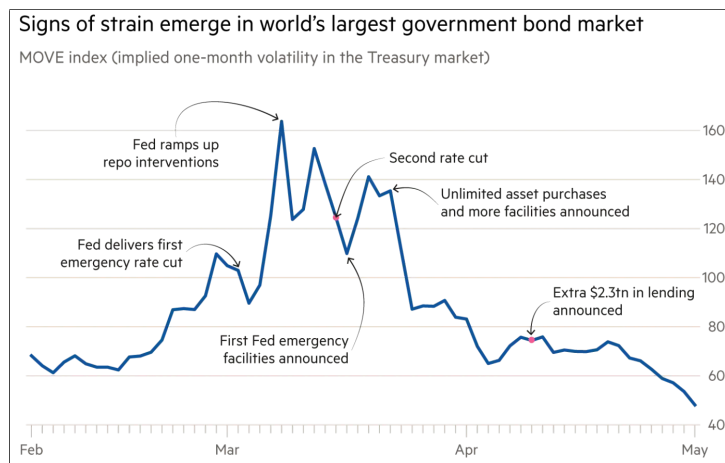


Figure 10: A timeline of US Federal Reserve emergency policy responses, superimposed over the US Treasury Market MOVE index¹⁵.

This dance between the market and the Fed captures how modern central banking may be nearing its ultimate climax: while the Fed is the supreme of the speculators, it must still listen to the crowd. Markets can and will force the Fed into compromising positions.

As the Federal Reserve approaches the zero-lower bound (0% FFR) and pushes its control of the bond market to its absolute limits, how will it respond if treasury yields continue to rise? Do they hike rates and risk blowing up the highly-leveraged bond market? Or do they pick up the next set of rocket launchers in the inflationary war room – negative rates and YCC – accelerating the sprint toward currency devaluation?

1.4.2 Bad News For Savers & Society

Now that we have touched on the dysfunctions of modern markets and the central banker's double bind, we return to the plight of the saver. Either squeeze is bad news: runaway inflation destroys the saver's already-dwindling purchasing power while a true deleveraging destroys real wages as the economy dives into prolonged structural change.

It's important to appreciate how this central banker squeeze, whichever way it plays out, will drive immense political and social change. The fated reversal of central bank power is as political as it is economic.

The saver's demise is the same story as rising inequality and class warfare. The end of the saver is the key economic ingredient in the road to revolutionary divide. We see early signs of these tensions: from Occupying Wall Street and the speculative skirmish between Wall Street Bets and Wall Street's hedge funds through to intense and sometimes violent political battles. Tragically, these issues will only deepen as the post-Nixon economic trajectory heads toward its crescendo.

"The first panacea for a mismanaged nation is inflation of the currency; the second is war. Both bring a temporary prosperity; both bring a permanent ruin. But both are the refuge of political and economic opportunists."

– Ernest Hemingway

2 Salvation Of The Saver, Is Crypto Ready For Fixed Income?

2.1 Bitcoin: The Austrian Moment & Salvation Of The Saver

While the Keynesian system scoffs at the saver, an emerging financial order puts them at the center of its universe. In an act of serendipity, this system was born in the aftermath of Lehmann's collapse, just as central banks tightened their stranglehold over capital markets.

We are of course referring to Bitcoin. Bitcoin's narratives have evolved over the years, but they continue to converge on one theme: the defense of purchasing power. It's a system that protects the saver like none other. Fixed supply is Bitcoin's constitution, guaranteed by immutable monetary policy and decentralized governance.

Bitcoin glorifies the HODLer not as a hoarding menace, but as the central agent of capital accumulation.

It breeds a capital market without the fragilities of interventionism. Central banks fight volatility as a bug whereas Bitcoin embraces volatility as the central feature. Deleveraging cycles are quick and nasty, necessary busts that reallocate the boom's late-stage froth. There is no collective bailout, no moral hazard and no Cantillon effect in Bitcoin – just a gut-wrenching drawdown that wipes away the leverage and resets the system for the next cycle of growth.

In a sense, Bitcoin is the Austrian view of the business cycle captured in a liquid asset. Markets dictate the credit cycle, not economists at the Fed. *Satoshi's genesis block is the Austrian moment, as important a turning point as Nixon's capitulation was for the Keynesians.*

2.2 The Next Era Of Money Markets: DeFi Fixed Income

Bitcoin not only gave savers a way to opt out of fiat devaluation, it inspired a renaissance of financial innovation free from central planning. Bitcoin's cycles fuel the broader crypto cycle, embodied in the rise of Ethereum. These innovation cycles are leading the next frontier of money markets and widening choice for the saver.

In particular, DeFi represents a golden age for crypto-native yield. DeFi is the greatest financial repurposing in crypto since the invention of Bitcoin. Its skyrocketing growth captures how any function of modern finance can be repurposed into a permissionless protocol and engine of yield.

Everything is up for grabs: saving, investing, trading, borrowing, lending. DeFi will ultimately express any financial primitive on-chain without central bank distortion and gatekeeper fees.

DeFi rejects centrally planned interest rates, capital controls and third party interference. It refuses to hide risk, nor will it bail out the “degen” who blows up in search of free lunch. Protocols are never “too big to fail”, no matter how “systemically important” (to borrow central banking lingo). In 2020 alone, DeFi exploits made up 20% of all cryptocurrency exploits, amounting to over \$100M in value destroyed or stolen¹⁶.

Counterintuitively, these frequent blow ups are one of the most important parts of the system: every hack, every exploit, itches DeFi's money markets a step toward antifragility and interest rate price discovery.

¹⁶URL: <https://ciphertrace.com/half-of-2020-crypto-hacks-are-from-defi-protocols-and-exchanges/>.

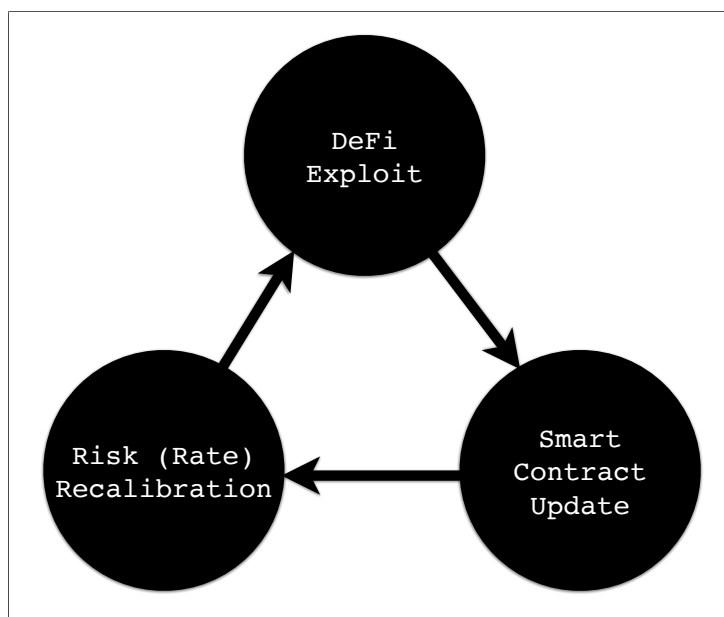


Figure 11: The DeFi antifragility loop: a free market for pricing risk.

While we are still early in this process of discovering crypto-native interest rates, the end game is a market converging on the “true” risk-free rate of interest. What is crypto’s FFR? What will a mature market for crypto fixed income look like? What is the hurdle rate for DeFi yield?

2.3 DeFi Yield: Erratic, Volatile & Correlated

2.3.1 If You Didn’t Realize, You Are The Yield

While DeFi is free from central bank distortion, it is far from ready for the mainstream saver. It may be a land-grab for the crypto farmer, but can it help the ordinary saver searching beyond their bank account?

DeFi’s tremendous yields come at too high a cost for the mainstream user. Risk accumulates in complicated ways: technical liquidation dynamics, EVM idiosyncrasies, market dislocations and flash loan exploits. These are all roads to financial ruin and can lead to the loss of principal capital, colloquially known as the “rug pull”.

Moreover, it is impossible for the average user to navigate the complexity of products and available APYs. Traditional yields are laughable, but the process is simple and intuitive, contrasting a fragmented experience in DeFi.

Finally, DeFi yield is far too volatile and correlated to crypto’s short term debt cycles. Today, DeFi yield is levered yield, reflecting the rise and fall of system wide leverage and the seasons in farmer liquidity. Can mainstream savers entrust their purchasing power to these micro cycles? DeFi needs to be less dependent on the rollercoaster of short term credit and more closely tied to crypto’s long term growth cycles.

Table 1: Snapshot of yields on 14 March 2021, a window into DeFi complexity.

Type	Protocol	Asset / Pool	APY
Lending (decentralized)	Aave	USDC	8.53%
	Compound	USDC	2.77% + 3.07% COMP
	Cream Finance	USDC	17.77%
Lending (centralized)	BlockFi	USDC	8.60%
		BTC	3.00%
	Celcius	USDC	10.51%
		BTC	4.06%
Farming (single asset)	Curve	3pool (DAI + USDC + USDT)	1.16% + 16.45%×(1 to 2.5) CRV
		BUSD (yDAI + yUSDC + yUSDT + yBUSD)	12.22% + 8.79%×(1 to 2.5) CRV
	KeeperDAO	USDC	30.97%
		ETH	16.51%
	Alpha Homora	ibETH	7.74%
Farming (aggregator)	Yearn Finance	v2 USDC yVault	16.93%
		v1 yCRV	21.60%
	Harvest Finance	USDC	16.59% COMP/IDLE + 5.37% FARM

2.3.2 The Matrix Of DeFi Yield: Derivatives Arbitrage, Options Overwriting, Farming & Lending

In this section, we will detail existing sources of crypto-native yield and their limitations for mainstream users.

Derivatives Arbitrage: The Basis Trade & Funding Arb

The basis trade (also known as the “cash and carry” trade) exploits the difference between spot and derivatives pricing. Traders capitalize on the seesaw between optimism and pessimism. As DeFi derivatives emerge, this trade will become a cornerstone for yield:

- **When the basis is negative**, the market is in a state of *contango*, and participants can earn yield by shorting futures and buying spot
- **When the basis is positive**, the market is in a state of *backwardation*, and participants can earn yield by longing futures and selling spot.

This trade is similarly structured for perpetual swaps, except that these products capture sentiment through a funding rate charged at discrete intervals:

- **When rates are positive**, arbitrageurs short the perp and long spot to collect funding
- **When rates are negative**, arbitrageurs long the perp and short spot to collect funding.

These trades are nascent in DeFi but will grow with protocols like dYdX and Vega. These strategies

require a high degree of sophistication and are a poor fit for the ordinary user. Savers are not sentiment traders.

Options Overwriting

Emerging alongside futures and perpetuals, selling DeFi options presents a compelling opportunity for yield. This involves selling puts or calls at specified strikes and expiries and collecting a premium. Depending on their risk profile, participants can either sell *covered* or *uncovered* options.

Selling options is complicated and an often dangerous business. Options sellers need strong directional views for price and implied volatility. They need to understand hedging dynamics. They require a rare mental fortitude to step out of the market when conditions are uncertain or unfavourable (e.g. rising volatility after a period of compression), lest they blow up in search for “pennies in front of a steamroller”.

Crypto Agriculture: Farming

Farming is DeFi’s answer to the longstanding problem of token distribution. Farmers lock up capital in a smart contract in exchange for a steady distribution of tokens.

Since rewards are denominated in a new, speculative asset, choosing the “right” farm can offer lucrative rewards far greater than derivative and lending yield:

- In early stages, a farm’s payoff structure resembles a call option or venture capital investment. In other words, it can go to zero or provide asymmetric returns (e.g. Yearn Finance)
- In later stages, successful farms become industrialised processes, offering relatively stable yet lucrative returns over time (e.g. Curve Finance).

Farming is a risky endeavour. Due diligence requires in-depth understanding of smart contract risk and DeFi-native economic exploits. Farmers must think like Venture Capitalists, evaluating teams, technologies, products and the general landscape.

Money Markets: Lending

Lending is arguably the simplest strategy for DeFi yield, executed at scale on both centralized and decentralized platforms. Annualised yields are significantly lower than other DeFi strategies but still more lucrative than the traditional savings account. The major risk for decentralized platforms like Compound or Aave is smart contract risk.

Money markets are the best match for mainstream savers.

Table 2: The matrix of DeFi yield.

Category	Source Of Yield	Type	Sophistication Required	Risks
Derivatives arbitrage	Hedgers / speculators	Futures cash & carry	HIGH	<ul style="list-style-type: none"> • Liquidation • Base asset exposure • Smart contract hack or exploit (if decentralized) • Platform insolvency
		Perpetual swap funding	HIGH	
Options Overwriting	Hedgers / speculators	Put selling	VERY HIGH	<ul style="list-style-type: none"> • Liquidation • Base asset exposure • Infinite downside • Smart contract hack or exploit (if decentralized) • Platform insolvency
		Call Selling	VERY HIGH	
Farming	Marginal token purchasers	LP token	MEDIUM	<ul style="list-style-type: none"> • Liquidation • Smart contract hack or exploit • Exposure to base asset(s) • Impermanent loss • Taxation uncertainty
		Single asset	MEDIUM	
Lending	Borrowers (hedgers / speculators / asset-rich)	Centralized	LOW	<ul style="list-style-type: none"> • Liquidation • Platform insolvency • Smart contract hack or exploit (if decentralized)
		Decentralized	LOW	

2.3.3 Savers Are Not Swing Traders: The Volatility Both Of Yield & Yield Denomination

Arguably, crypto yield will always be more dynamic than traditional yield. This reflects a freer market where risk is out in the open rather than caged away. However, even with this caveat, the above four strategies offer yields that are too volatile and unsuitable for saving. Figure 12 overlays the price of Ether and the Utilization Rate on Compound Finance, a proxy for interest rates. Notice the Utilization Rate is highly correlated with Ether price, which is highly volatile.

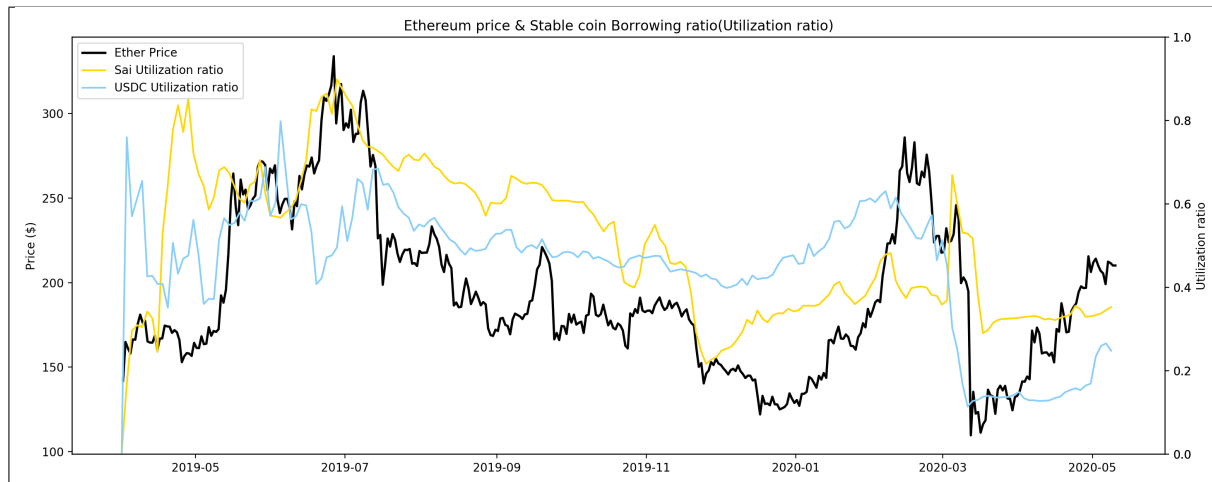


Figure 12: The price of Ether and utilization rates of SAI/USDC on Compound Finance since early 2019. Note the correlation between the price of Ether – which is extremely volatile – and utilization rates over time.

Not only are yields themselves volatile, so is the denomination of yield. When markets are climbing, speculators demand long crypto-exposure, willing to borrow fiat at higher rates. When markets are falling, speculators demand short crypto-exposure, willing to borrow crypto at higher rates. Mainstream users can't keep up with the volatility of yields, let alone the constant change in yield denomination. The different regimes of DeFi yield are summarised in Table 3.

Table 3: Regimes of DeFi yield.

Market Direction	Speculator Positioning	Yields On Fiat	Yields On Crypto
Rising	Long	High	Low
Falling	Short	Low	High

2.3.4 DeFi Yield Is Levered Yield

In the previous sections, we unpack DeFi's various sources of yield. But a question remains: *why* can yield be generated in the first place?

In all four cases, the answer is leverage:

- Speculators pay a premium for leveraged, futures market exposure

- Options buyers pay a premium for leveraged exposure to the next six-sigma move
- Farmers plant hard-earned crop into unaudited smart contracts to punt on the “next YFI”
- Speculators borrow fiat by collateralizing their crypto, upgrading their lifestyle while maintaining exposure to the bull market.

At every level, the fundamental source of DeFi-native yield is credit. This is not necessarily a bad thing, but it explains why DeFi yields are erratic, volatile and correlated. Ultimately, this results in the same debt cycles which afflict the traditional financial system, except that they function in an open setting free from intervention:

- **Periods of high yield** are characterised by the expansion of credit, as system leverage rises, open interest booms, shorts are squeezed, the basis expands, funding rates skyrocket, DAI is generated and USDC is printed
- **Periods of low yield** are characterised by the contraction of credit, as the system deleverages, open interest collapses, longs are liquidated, the basis contracts, funding rates fall, CDPs are closed and USDC is redeemed.

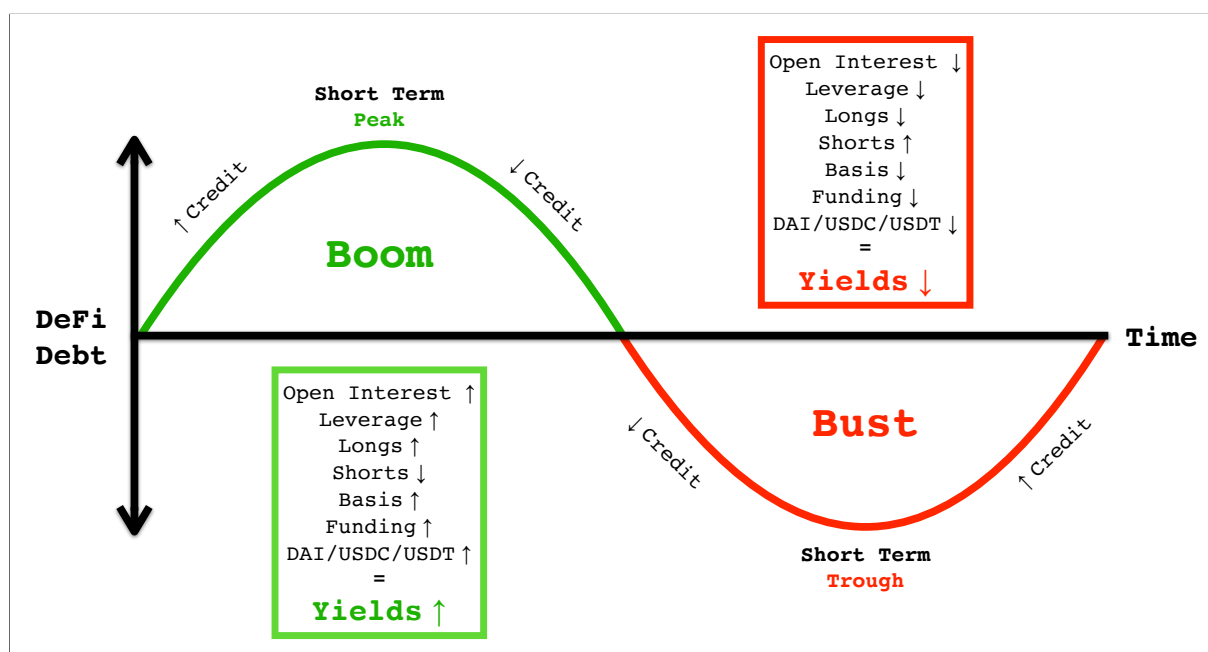


Figure 13: Conceptual summary of the short term DeFi credit cycle.

2.3.5 The Path To Crypto Fixed Income: Smoothing DeFi's Yield Curve

DeFi presents a powerful opportunity for the savvy trader and forward-looking farmer, but the conclusion for ordinary savers is bleak. It may be a free market for money markets, but DeFi is not yet an alternative to simple saving strategies.

How does DeFi graduate beyond speculative booms and busts to become crypto-native fixed income? How can these markets give average users a reliable source of yield?

DeFi needs a smoother yield curve. There needs to be a way to augment DeFi yield away from the

extremities of short term leverage. There needs to be a way to tie savings rates to the macro crypto cycle, not its micro debt cycles.

Is there a way to escape the levered nature of DeFi yield and find a stable source of unlevered crypto yield while building on DeFi's ingenuity?

What if there was a source of yield which was (1) not the output of short term credit expansion, (2) backed by future streams of cash flow and which (3) closely tracked crypto's macroeconomic cycles?

2.3.6 Debt-Free Yield: Proof-Of-Stake Is DeFi's Dark Horse

There is only one stream of returns in the entire ecosystem satisfying this criteria – Proof-of-Stake (PoS) block rewards:

- **Inflation** – Ethereum 2.0 generates PoS block rewards
- **Cash Flow** – EIP-1559 ties ETH's value to transaction fees
- **Macro** – ETH is closely cointegrated with BTC.

PoS is DeFi's dark horse. Marrying microeconomic DeFi yield with macroeconomic PoS yield – as per Figure 14 – presents a powerful opportunity to create a stable source of unlevered yield, leveraging the power of DeFi while offering mainstream users a genuine alternative to their savings account.

Welcoming Anchor.

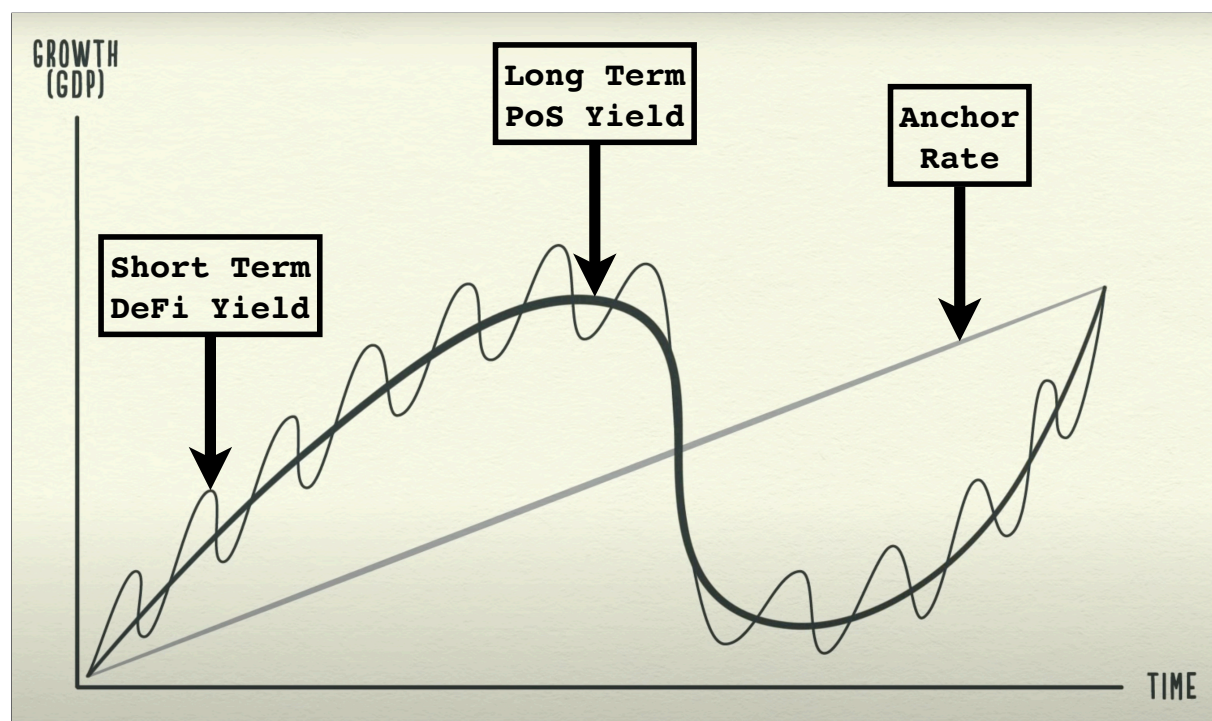


Figure 14: A conceptual overview of Anchor's mechanism for interest rate stability: the aggregation of DeFi and PoS yield¹⁷.

¹⁷URL: <https://www.youtube.com/watch?v=PHeObXAIuk0>.

3 Anchor, DeFi's Risk-Free Rate & The Stripe For Savings

3.1 The Decentralized Federal Funds Rate

Anchor is the first fixed income protocol that produces a reliable stream of crypto-native returns. By aggregating PoS block rewards, Anchor targets a stable, self-regulating interest rate, becoming DeFi's only source of unlevered, debt-free yield. Akin to a decentralized FFR, this aggregation creates the **Anchor Rate**, the foundation of Anchor money markets.

The Anchor Rate is a simple yet incredibly powerful innovation. In time, it will not only attract mainstream savers into DeFi, but cement itself as the primary risk-free reference rate and benchmark for yield-generation within crypto. *As the first-mover in crypto-native fixed income, the Anchor Rate may ultimately evolve into a LIBOR rate for DeFi money markets.*

Anchor is a lending protocol deployed as a Web Assembly smart contract on the Terra blockchain. This is a marketplace for lending and borrowing stablecoins, beginning with TerraUSD (UST) and expanding to other Terra stablecoins in the future. Anchor functions in a similar way to other money markets in DeFi but is equipped with a unique innovation:

- **In existing protocols like Compound or Aave**, both lenders and borrowers are subject to a highly volatile, floating interest rate which depends on supply and demand of stablecoins
- **In the Anchor protocol**, only borrowers are subject to a floating rate, while depositors earn a stable benchmark rate of interest (the Anchor Rate).

In the following sections, we introduce the primitives that deliver depositors this stable rate of return, arguing that Anchor may bridge the yield-deprived mainstream saver into a new world of DeFi-native fixed income.

3.2 Mechanism Design: Building A Better Savings Account

3.2.1 Unlocking PoS Collateral & The Power Of bAssets

Opening loans on Anchor is a familiar process. Similar to Aave or Compound, loans must be overcollateralized and are subject to a minimum loan-to-value ratio (LVR) varying between 0 and 1. The LVR changes depending on the type of collateral, calibrated by the protocol's assessment of asset quality:

- Volatile, illiquid collateral is assigned a lower LVR and grants less borrowing power given its higher default risk
- Stable, liquid collateral is assigned a higher LVR and grants more borrowing power given its lower default risk.

Anchor is a multi-collateral system. Borrowers can open loans against multiple assets. The LVR is thus the sum of the value of all assets weighted by their individual LVRs:

$$\text{Aggregate LVR} = \mathbf{LVR}_{\text{net}} = \frac{\sum_i (\text{LVR}_i \times \text{CV}_i)}{\sum_i \text{CV}_i}$$

where LVR_i = Loan-to-value ratio of the i -th bAsset collateral

CV_i = UST-equivalent collateral value of the i -th bAsset collateral deposit.

Besides the ability to borrow against a basket of collateral, this is standard DeFi workflow. Anchor's "0-to-1" differentiation is not in loan execution, but in the class of collateral assets it can support.

On Anchor, only *bAssets* are accepted as collateral.

3.2.2 Terra's Staking Derivatives: bAssets

Bonded assets (bAssets) are a generalized class of staking derivatives for Proof-of-Stake tokens. Simply, bAssets are tokenized stakes – "shares" – of a PoS blockchain, liquid derivatives that allow PoS holders to earn staking rewards without lengthy unbonding periods.

The bAsset protocol fundamentally changes the economics of PoS staking and unlocks billions of dollars in new DeFi collateral. These bAssets can be generated on any PoS blockchain with smart contract capability.

Allowing for the programmatic redistribution of PoS rewards, bAssets are Anchor's core primitive. Note that a complete discussion of the bAsset protocol is beyond the scope of this report. For a complete description, see [The bAsset Protocol: The Inter-Blockchain Financial Layer](#).

3.2.3 Introducing The Anchor Rate

As discussed in the first section of this report, the Federal Funds Rate (FFR) underpins the US yield curve. The FFR sets market expectations for long term interest rates and functions as the primary risk-free reference rate for any investment. In a sense, the US Federal Reserve is the FFR's oracle source, updating its value periodically.

The market interacts with the FFR as a single, clear and known risk-free rate of interest. In contrast, DeFi rates are fragmented across platforms. How can market participants accurately rely on any one particular source of yield as their forecasting benchmark, when each oracle source presents its own risk/reward profile? DeFi yields are not anchored to anything except the whims of transient liquidity.

*The Anchor Rate is crypto's answer to the FFR, introducing the idea of a **Decentralized Funds Rate (DFR)**.* The Anchor Rate aggregates PoS returns, using block rewards from a collection of PoS assets to derive an average return rate. This is an interest rate tied to on-chain income generated by a basket of PoS blockchains. As a diversified set of return streams, the Anchor Rate is less dependent on the volatility of DeFi debt cycles and is thus likely to be significantly more stable than any single source of yield today.

Formal Definition

The Anchor Rate is defined as the rolling, 12-month, average yield earned by each bAsset deposited in Anchor's money market, weighted by the collateralization ratio and UST-equivalent collateral value. Mathematically:

$$\text{Anchor Rate} = \mathbf{AR} = \frac{\sum_i^i (CV_i \times \tilde{y}_i \times CR_i)}{\sum_i^i CV_i}$$

where CV_i = UST-equivalent collateral value of the i -th bAsset collateral deposit

\tilde{y}_i = Rolling 12-month average (annualized) yield of the i -th collateral bAsset deposit

$CR_i = \frac{1}{LVR_i}$ = Collateralization ratio of the loan the i -th bAsset collateralizes.

For instance, let's assume the bAssets listed in Table 4 are deposited as collateral into Anchor's money market.

Table 4: Demonstrating the calculation of the Anchor Rate for a group of bAssets.

PoS Blockchain	bAsset	CV	LVR	y
Solana	bSOL	\$10,000,000	0.4	8.6%
Polkadot	bDOT	\$5,000,000	0.5	10.2%
Terra	bLUNA	\$8,000,000	0.7	6.3%
Cosmos	bATOM	\$15,000,000	0.6	8.9%

In this case, the Anchor Rate is calculated as follows:

$$\begin{aligned} \text{Anchor Rate} &= \frac{(\$10M \times 8.6\% \times \frac{1}{0.4}) + (\$5M \times 10.2\% \times \frac{1}{0.5}) + (\$8M \times 6.3\% \times \frac{1}{0.7}) + (\$15M \times 8.9\% \times \frac{1}{0.6})}{\$10M + \$5M + \$8M + \$15M} \\ &= 16.1\% \end{aligned}$$

3.2.4 DeFi Money Markets Operations

Like any other DeFi money market, Anchor calibrates supply and demand between borrowers and lenders by adjusting the market rate of interest – the Platform Interest Rate (PIR) – in line with a predetermined bonding curve. Before we introduce Anchor's unique innovation in the next section, we will describe how PIR is determined in DeFi today.

The curve increases the PIR as the demand to borrow UST rises and lowers the PIR as demand for UST falls.

We define the Utilization Rate (UR) as the percentage of deposits currently borrowed:

$$\text{Utilization Rate} = \mathbf{UR} = \frac{\text{Borrowed Deposits}}{\text{Total Deposits}}$$

The UR varies between 0 and 1, where $UR = 0$ represents no outstanding loans and $UR = 1$ represents no additional capacity for lending. We can thus construct a bonding curve where the UR determines the PIR. In Anchor, when the $UR = 0$, the PIR is 2%. When $UR = 1$, the $PIR = 44\%$. These are the platform's minimum and maximum interest rates.

For Anchor, the PIR bonding curve is a simple linear function of UR:

$$\text{Platform Interest Rate} = \mathbf{PIR} = 0.42 \times UR + 0.02$$

In DeFi, lenders earn the PIR multiplied by the UR. To understand why, consider the case where only 50% of the UST pool is lent to borrowers. Since the remaining 50% of the UST pool is sitting idle, lenders are entitled to only 50% of the yield:

$$\text{Lending Rate} = \mathbf{LR} = \text{PIR} \times \text{UR}$$

On the other hand, borrowers pay the full PIR:

$$\text{Borrowing Rate} = \mathbf{BR} = -\text{PIR}$$

Note the negative sign: borrowers are *paying* interest, not earning it.

Can Lending Rates Become Stable?

There is a critical flaw in the above construction. Both lending and borrowing rates are functions of the UR, which vastly changes in line with DeFi debt cycles. As a result, the LR is highly volatile, making lending unsuitable as an alternative to a stable savings account.

What if we could dynamically adjust the LR to achieve some stable target rate? What if we could subsidise both the borrower and the lender with some additional stream of returns continuously adjusted to achieve a stable lending rate?

3.2.5 Anchor's Genius: Subsidising DeFi With PoS

On the Anchor protocol, lending and borrowing rates are subsidised by a stream of PoS block rewards from bAsset collateral. This modifies the lending and borrowing rates outlined in the previous section to include a subsidy:

$$\begin{aligned} \text{PoS-Subsidized Lending Rate} &= \mathbf{LR}_{\text{anchor}} = (\text{PIR} + S_{\text{lender}}) \times \text{UR} \\ \text{PoS-Subsidized Borrowing Rate} &= \mathbf{BR}_{\text{anchor}} = (-\text{PIR} + S_{\text{borrower}}) \end{aligned}$$

where S_{lender} = proportion of bAsset collateral generated PoS yield awarded to the lender

S_{borrower} = proportion bAsset collateral generated PoS yield awarded to the borrower.

S_{lender} and S_{borrower} represent proportions of the total stream of block rewards produced by deposited bAsset collateral.

Total PoS Yield

The net yield on PoS rewards generated by collateralised bAssets is simply the PoS yield on the bAsset multiplied by the collateralization rate of the loan:

$$\text{Total PoS Yield Subsidy} = \mathbf{S}_{\text{total}} = \text{CR} \times y$$

where CR = Average collateralization ratio of all deposited bAsset collateral

y = Average annualized yield generated by all deposited bAsset collateral.

For example, consider a \$1,000 UST loan collateralized by \$2,000 equivalent of bLUNA which hypothetically generates PoS rewards at a rate of 14% annualised. Since the loan is two times overcollateralized, the effective yield of the bLUNA on the UST loan is $2 \times 14\% = 28\%$.

Subsidising Borrowing & Lending

Anchor defines the ratio of the total subsidy (S_{total}) given to the lender as alpha (α), ranging between 0 and 1:

- When $\alpha = 0$, the lender receives zero portion of the PoS block rewards
- When $\alpha = 1$, the lender receives the entirety of the PoS block rewards.

Whenever $0 \leq \alpha < 1$, remaining rewards go to the borrower to subsidise their loan in line with the ratio $1 - \alpha$. That is, *this PoS subsidy allows Anchor to pay borrowers to take out loans*. Mathematically:

$$\begin{aligned}\text{Lender PoS-Subsidy} = \mathbf{S_{lender}} &= S_{\text{total}} \times (\alpha) \\ &= (CR \times y) \times (\alpha)\end{aligned}$$

$$\begin{aligned}\text{Borrower PoS-Subsidy} = \mathbf{S_{borrower}} &= S_{\text{total}} \times (1 - \alpha) \\ &= (CR \times y) \times (1 - \alpha)\end{aligned}$$

If we substitute this back into the equations in Section 3.2.5, we have:

$$\begin{aligned}\text{LR}_{\text{anchor}} &= [\text{PIR} + (CR \times y) \times (\alpha)] \times \text{UR} \\ \text{BR}_{\text{anchor}} &= [-\text{PIR} + (CR \times y) \times (1 - \alpha)]\end{aligned}$$

3.2.6 The Target Lending Rate: Stabilization Mechanics

In Anchor, the lending rate targets the Anchor Rate. This is crypto-native monetary policy without a board of PhDs. To achieve this, the protocol adjusts α on a block-by-block basis such that the PoS block rewards from bAsset collateral subsidise the PIR *until the Lending Rate equals the Anchor Rate*.

Consider the following scenarios, summarised in Table 5 and shown in Figure 15:

- **The LR is below the Anchor Rate:** in this case, lenders receive too little interest. As a result, α is increased block-by-block, increasing the lender's share of the PoS rewards *until the sum of the PIR and their PoS yield equals the Anchor Rate*
- **The LR is equal to the Anchor Rate:** in this case, lenders are receiving the Goldilocks amount of interest – “just the right amount”. As a result, α is left unchanged

- **The LR is above the Anchor Rate:** in this case, lenders receive too much interest. As a result, α is decreased block-by-block, decreasing the lender's share of the PoS rewards, *until the sum of the PIR and their PoS yield equals the Anchor Rate*.

Table 5: Anchor's lending rate stabilization mechanics.

Scenario	Dislocation	α Adjustment	Action	Result
LR < Anchor Rate	Lender receiving too little interest	\uparrow	Lender PoS rewards \uparrow	LR \uparrow to the Anchor Rate target
LR = Anchor Rate	N/A	Stays the same	N/A	Stays the same
LR > Anchor Rate	Lender receiving too much interest	\downarrow	Lender PoS rewards \downarrow	LR \downarrow to the Anchor Rate target

This system is highly desirable for both lenders and borrowers:

- **For Lenders** – Lenders on Anchor money markets earn a stable fixed income yield directly tied to the Anchor Rate, a highly stable rate of return. This makes it uniquely suited as a competitor to the traditional savings account
- **For Borrowers** – Borrowers on the Anchor money markets are subject to a variable rate, which can be positive if their share of the bAsset PoS rewards surpass the PIR. In other words, there are times when Anchor pays borrowers to take out loans.

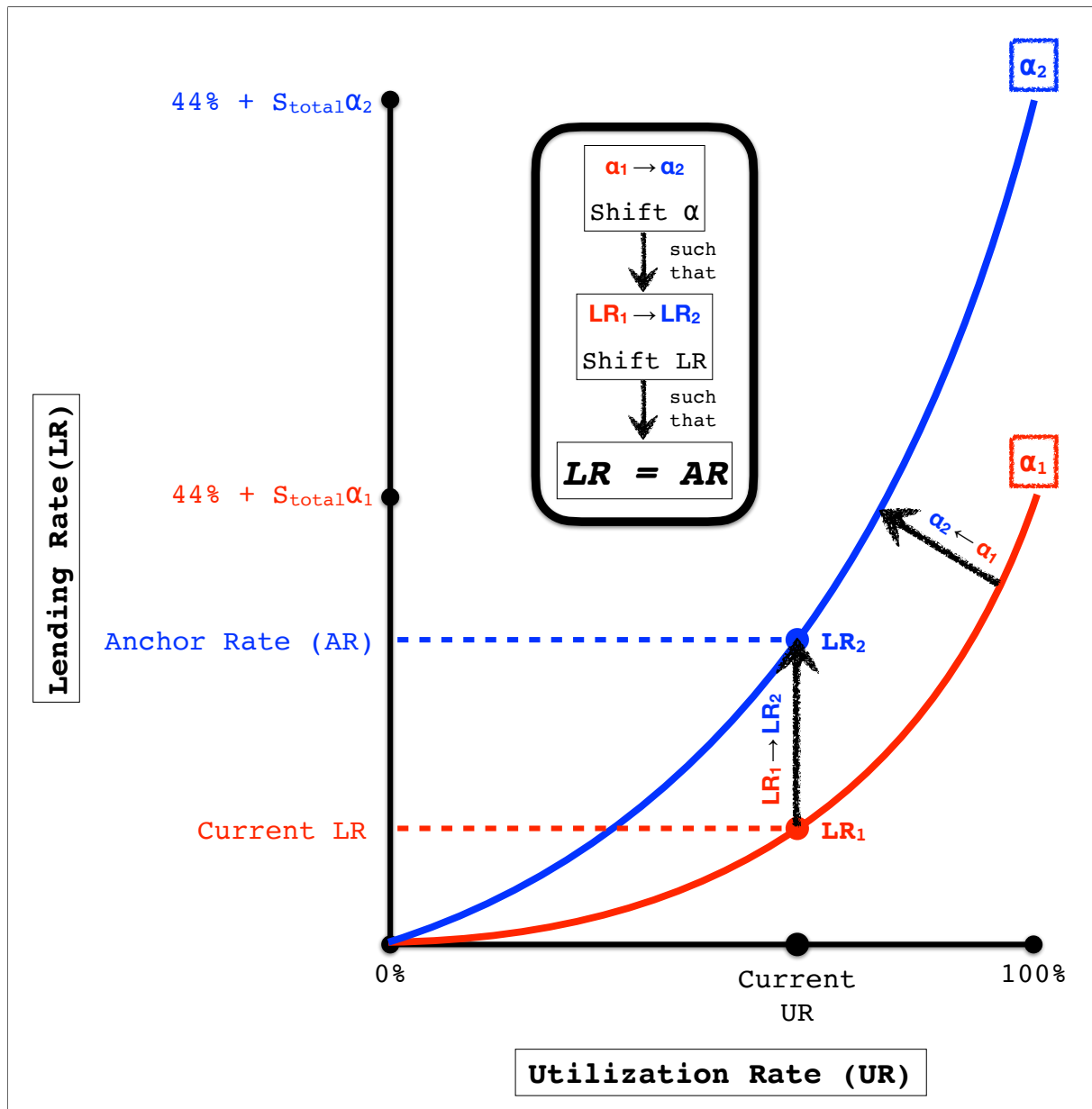


Figure 15: Anchor's interest rate targeting mechanism modifies α to converge the lending rate with the Anchor Rate. This has the effect of shifting the Anchor interest rate "curve".

3.2.7 Anchor As A Financial Control System

The Anchor protocol can be thought of as a closed loop, self-regulating financial control system. This system uses the Anchor Rate as the stabilizing force, moving closer to equilibrium on each iteration. Free from central planning, this self-referential process shifts the market toward a stable rate of interest.

As per Figure 16, the lending rate is compared to the Anchor Rate block-by-block, producing a new value for α . This value is fed back into the smart contract – along with the current yield of bAsset collateral, collateralization ratios and deposit utilization rate – to produce a new lending rate, theoretically closer to the Anchor Rate.

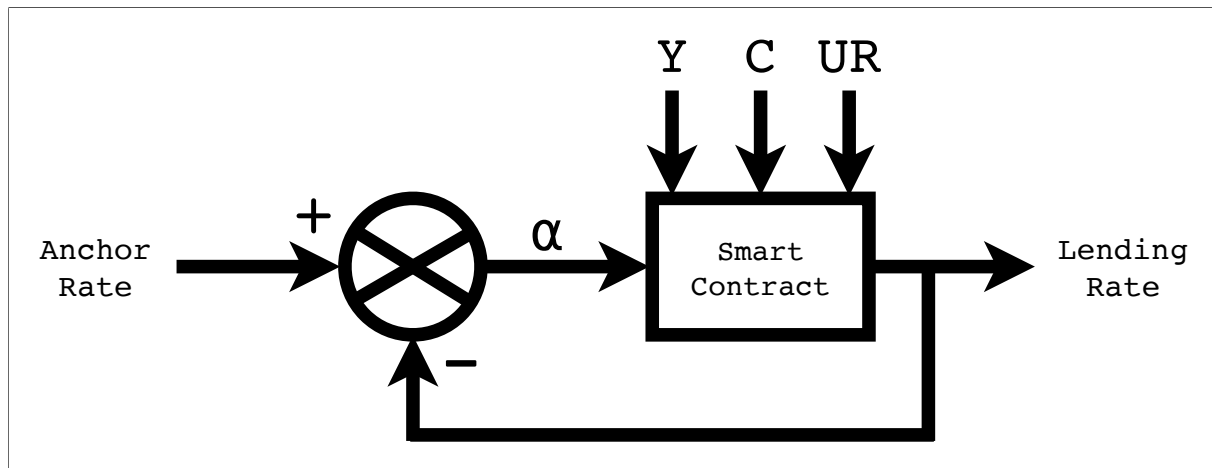


Figure 16: Anchor as a closed loop financial control system.

3.2.8 DeFi FDIC: Protecting The Depositor's Principal

On Anchor, *all* lender deposits are fully guaranteed. This is akin to TradFi's FDIC without third party insurance. The *insurance* is the *collateral*. The system remains solvent as long as the underlying bAsset collateral can be liquidated when loans become undercollateralized. This is achieved through a liquidation contract, a liquidation mechanism unique to the Anchor protocol.

Note that as with any DeFi protocol, these economic protections don't eliminate general smart contract risk.

The Liquidation Contract

The liquidation contract is like one half of a central limit order book, composed entirely of standing orders to *buy bAsset collateral*. Contract writers must fully collateralise their orders so that each contract always has the UST necessary to fulfill the order at hand, locked on-chain. Retracting a contract requires one month's notice.

There are two core reasons liquidation contracts exist:

- When a borrower's debt position becomes undercollateralized, they are forced to buy liquidation contracts. This ensures borrowers repay their outstanding debts. On liquidation, the Anchor protocol automatically matches borrowers with a liquidation contract(s), thus protecting deposits
- As bAsset collateral generates PoS rewards, Anchor automatically buys liquidation contracts to convert the multi-token proceeds into UST to subsidise lenders and borrowers.

In the edge case where the liquidation contract order book is empty, Anchor activates a MakerDAO-like "keeper" system. This is an emergency system that goes out to the market and allows anyone to bid on liquidated bAsset collateral. Successful bidders pay off the outstanding debt and earn an arbitrage profit on the seized collateral.

This is a last-resort mechanism and is not part of normal operations. As was demonstrated in March 2020, the "keeper" system can end up offloading collateral for zero cost when liquidity is thin and market conditions are extremely volatile, exposing the system to the risk of insolvency.

In the following section, we discuss incentives to maintain healthy liquidation contract liquidity.

Liquidation Contract Incentives

Anchor incentivizes liquidation contract writers in two ways:

- **Passive premium:** writers are rewarded with a passive interest rate for the life of the liquidation contract. This premium is dynamic, rising when contract depth is shallow and falling when contract depth improves. Passive premium is charged to borrowers in addition to the borrowing rate, ensuring there are always participants willing to back stop Anchor
- **Exercise profit:** if a liquidation contract is purchased, the writer receives a liquidation fee and can earn an at-risk arbitrage premium by liquidating the cheaply purchased collateral.

3.3 The ANC Economy: Governance & Token Economics

The Anchor governance token (ANC) is the native asset of the protocol. When staked, the ANC token can be used to vote on system parameter changes – including supported PoS bAssets, minimum LVRs and liquidation fees – as well as ecosystem funding proposals levied against the community ANC pool. The ANC token economy is outlined in Table 6.

ANC's value accrual extends beyond governance. A percentage of the staking yield of all bAsset collateral pools is used to buy back and redistribute ANC tokens from Terraswap to holders of staked ANC. This directly ties the value of ANC to the collateral pool's growth in TVL.

Table 6: ANC token economy.

Category	Beneficiary	Percentage (Of Life-time Supply)	Description
Incentives	Borrowers	40%	Linearly distributed over 4 years.
	ANC/UST Liquidity Providers	5%	Linearly distributed over 1 year.
Airdrop	LUNA Stakers	15%	5% distributed at genesis, followed by 10% distributed block-by-block over 2 years.
Community Pool		10%	Distributed at genesis to the community fund.
Team		10%	2.5% distributed yearly, over 4 years.
Seed Investors		20%	Following a 6 month cliff, distributed linearly over 12 months.

3.3.1 Bootstrapping Anchor

At launch, Anchor’s only supported bAsset will be bLUNA. Since the Anchor Rate aggregates a basket of PoS assets, it’s theoretical calculation won’t be possible during this early bootstrapping phase. Instead, the Anchor Rate will initially be fixed to 20% and the protocol will use ANC incentives to ensure the deposit rate converges with the peg.

The initial pegged Anchor Rate is guided by the current onchain yield of LUNA, which is approximately 12%. With an initial value of $LTV_{bLUNA} = 50\%$, the yield on deposits is $\frac{1}{0.5} \times 12\% = 24\%$, which is sufficient to support a pegged Anchor Rate of 20%. Post launch, the pegged Anchor Rate will be set by ANC governance processes depending on changes in bLUNA yield, until deposit liquidity reaches escape velocity and a sufficiently diverse collection of PoS assets are incorporated into the bAsset protocol. Highest priority PoS assets include Polkadot, Solana and Cosmos.

During this bootstrapping phase, bLUNA staking rewards make up the “real yield” of the protocol. Anchor will adhere to the following schematic:

- **If real yield > pegged Anchor Rate**, excess yield is stored in a UST denominated “yield reserve”. ANC incentives to borrowers drop by 15% every weekly epoch
- **If real yield < pegged Anchor Rate**, the yield shortfall is drawn down from the yield reserve until it is depleted. ANC incentives to borrowers increase by 50% every weekly epoch – incentivising bAsset collateralized loans – until the real yield converges with the pegged Anchor Rate.

3.3.2 A Crypto-Native Bond Market: The Future Of Fixed Income

The Anchor Rate is the first crypto-native analogue to the Federal Funds Rate. As the DFR of DeFi, we are excited to see how the Anchor Rate will impact yield across DeFi as well as forward expectations for interest rates – just as the FFR influences 5 year, 10 year and 30 year government bonds.

The emergence of a reliable DFR means we now have the fundamental economic primitive to create a crypto-native yield curve. To this end, we encourage developers to view the Anchor Rate as the oracle source for new financial products, such as futures and options.

Once this DFR is mature and well-understood, we expect to see a derivatives market form around the Anchor Rate. If a decentralized derivatives exchange were savvy enough to launch Anchor Rate futures across multiple durations (e.g. 3 month, 6 month, 12 month and 2 year) and attract sufficient liquidity, they would spur the creation of a crypto-native bond market rivalling TradFi’s fixed income.

3.4 Diversification Benefits & Terra’s Financial Stack

Terra Financial Stack’s present a tool of economic primitives that revamp the cryptocurrency portfolio. Today, crypto-native portfolios are risk-on, exposed to the same correlated and high-beta assets, ultimately at the whim of Bitcoin volatility.

The Anchor Rate introduces crypto-native fixed income as a portfolio diversifier. In the same vein as the traditional “60/40” portfolio of stocks and bonds, a market for DeFi fixed income will dampen portfolio volatility across market cycles.

Visualized in Figure 17, we believe that Anchor – alongside products in the Terra ecosystem like Spar, Mirror and Alice – will become a staple of the crypto portfolio.

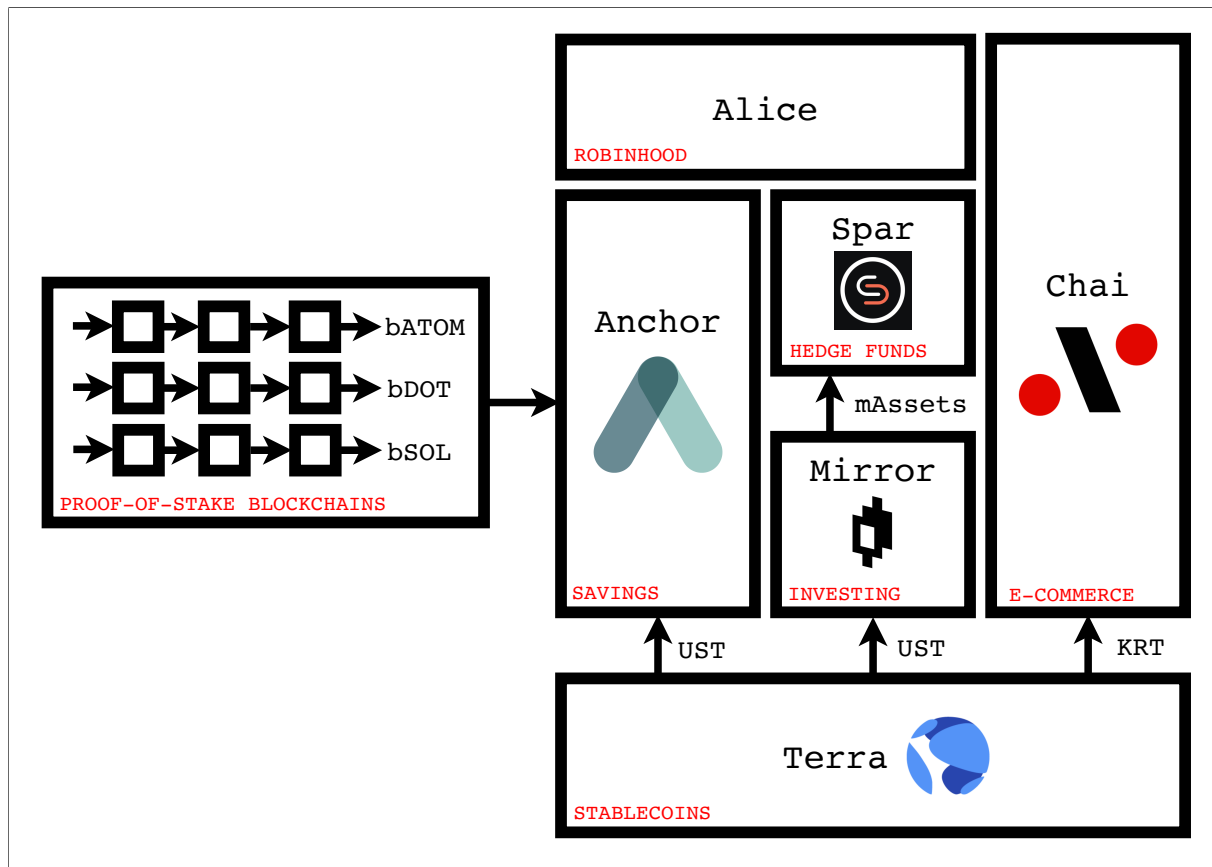


Figure 17: The Terra Financial Stack.

3.5 The Missing Piece Of TradDeFi: Stripe For Savings

As we described in our previous report on Mirror, TradDeFi represents a new paradigm for integrating traditional finance with cryptocurrency. It is a “1-to-N” opportunity to scale the crypto-markets and attract institutions with deep pools of capital. While pioneering allocators have begun dipping their toes, the majority of institutions and corporate treasuries are not comfortable with direct exposure.

This is where Anchor presents itself as the Trojan Horse for widespread adoption. What if Anchor became the gateway for institutional involvement as incumbents search for an Oasis in today’s fixed-income Sahara? What if Anchor offered TradFi access to fresh sources of yield while abstracting away its underlying mechanisms?

Anchor is positioned to become the Stripe of Savings. While it will first launch as a Web3 app, the true “1-to-N” moment is the subsequent release of the SDK. This will allow traditional depository institutions (like banks) or any company with access to customer capital (like FAANG) to seamlessly integrate the Anchor savings protocol. They can easily offer their client base a reliable, stable source of yield, while Anchor abstracts away the cryptocurrency backend. In this sense, Anchor becomes a FinTech API for “plug-and-play-savings”. Just as Stripe empowers internet payments, Anchor allows for the financialization of any web or mobile application.

Conclusion

The decline of the modern saver is a window into volatile times. Central bankers sprint toward the finish line of fifty years of Keynesian magic. As this trend finds its crescendo, the global economy faces a wave of economic and political turbulence, dragging down the saver at the hands of economic de-leveraging or currency devaluation.

Bitcoin and cryptocurrency are a twist of optimism in this otherwise one-sided tale of monetary collapse. We hope that Bitcoin's salvation for the saver and ethos of anti-dilution, coupled with DeFi's golden age of financial creativity, empower the mainstream saver amidst this highly dysfunctional environment.

Anchor resurrects the saver from a half-century demise. Yet, Anchor is just the beginning. The dawn of crypto fixed income starts at a decentralised risk-free rate – *the Anchor Rate* – but it's impossible to predict where this will go. If Anchor were to be integrated into a mainstream savings account – one API and pioneering bank or corporate away – then DeFi's mainstream moment could be right around the corner.

If the Anchor Rate becomes DeFi's risk-free rate, it will provide the foundation for a new era in crypto fixed income. It will give rise to markets and instruments that we cannot yet imagine, things that rival TradFi infrastructure without the distortions of modern interventionism. We are excited to be part of the Anchor Protocol and continue doubling down on our commitment to the Terra ecosystem.