Synchronizing § Cryptographic Bonds

CBonds Finance
Revision 10
SUBJECT TO CHANGE DURING AUDIT

Abstract. Projects in the decentralized finance space have been utilizing stake and proof-of-liquidity mechanics to develop a trustless decentralized market. However, the massive successes of these mechanics came with some new problems. Cryptobonds addresses these problems by offering a solution with 'tradeable stake positions', requiring the bonding of Uniswap liquidity pairs with our ERC-20 token (SYNC).
The CryptoBond smart contract allows users to earn interest on SYNC by staking a bond between SYNC and Uniswap liquidity provider tokens. Crypto Bonds are an ERC-721 (NFT) with collectible attributes, fixed or dividend interest rates, and the ability to separately trade within a secondary market. The CryptoBond smart contract automatically adjusts its interest rates depending on the SYNC economy. Interest rates decline as new bonds are made, and increase as they mature. CryptoBonds will forever function to dynamically attract long-term investors with attractive interest rates on SYNC.
The SYNC Network works to bring stability and risk mitigation to decentralized finance by demonstrating a long-term backbone for liquidity pools, building a needed, stable foundation for the DeFi space in the long term and more robust decentralized market.

1 Introduction

1.1 The SYNC Network

The SYNC Network is composed of two main contracts: the SYNC ERC-20 contract and the Crypto Bond ERC-721 contract. SYNC tokens have an undefined total supply with inflationary and deflationary attributes through the interactions with CryptoBond investment.

Despite being a long-term tradeable stake, **Crypto Bonds do not share anything in common with traditional finance bonds**. The name comes from the bonding of liquidity pairs and our own token. Crypto Bonds introduce **proof of long-term position** in DeFi liquidity pools, and will naturally strengthen the core of DeFi finance as a whole. They are a **tradeable**, long-term (90 days - 3 years) stake - bonding Uniswap liquidity-pair tokens together with SYNC.

Deflation of the SYNC currency happens when Crypto Bonds are created, burning SYNC from the total supply. When created, a CryptoBond locks liquidity-pair tokens with the corresponding dollar-to-dollar value in SYNC at the currently offered interest rate of SYNC. The longer the CryptoBond stake, the

higher the interest offered. When a CryptoBond matures and is claimed by the holder, the SYNC re-enters the market, minting the principle plus interest.

1.2 Why create a Crypto Bond?

Crypto Bonds employ a unique risk mitigation strategy, along with a return on SYNC. At time of creation, a CryptoBond takes equal dollar amounts of liquidity token pairs from Uniswap and SYNC and then locks them into an ERC-721 Non-Fungible Token. There are two types of bonds: normal maturing, and dividend-accruing. Dividend bonds allow the withdrawal of a quarterly payment of SYNC any time after each 90-day time period is up. When a bond matures, liquidity tokens are returned, original amount of SYNC is returned plus interest, and all Uniswap fees are still the holder's to keep.

Trustless Transfer and Trading with NFTs The ability to trade and transfer your Crypto bonds to another wallet address at only the expense of a GAS fee, or list the CryptoBond NFT on a market for a completely second-layer solution.

Proof of Locked Liquidity. Time locking Uniswap liquidity pool tokens allows others in the DeFi space, and new token releases, to show how much money is locked up so that 'pulling the rug' is not possible.

Backed By Financial Theory The equations and interest rates offered by SYNC are backed by financial and economic theory, and **you will never receive less SYNC than the CryptoBond was created with.**

Both Inflationary and Deflationary CryptoBonds are able to offer SYNC interest because CryptoBonds can also burn SYNC (although overall, SYNC is slightly inflationary.) CryptoBond interest rates depend on the total supply of SYNC. SYNC is burned when bonds are created, and re-minted when bonds mature. The result is a realistic ebb and flow of interest rates, total supply, and a stable backbone to the SYNC token under an inflationary CryptoBond mechanism.

1.3 Types of Crypto Bonds

Term Crypto Bonds offered at 90-day, 180-day, 1, 2, and 3-year time durations.

Dividend CryptoBonds Dividend/Quarterly Crypto Bonds are only available for 1, 2, and 3 year bond lengths, and are subject to a different interest rate because of their dividend behavior. See below for details.

2 Problems that Crypto Bonds Address

Lack of long-term incentives in DeFi With staking platforms comes the ability to un-stake at any point in time. The cycle that is often seen with this relatively simple model is: Early users stake, project gains popularity increasing the price of the coin/token, followed by a mass un-staking of those early entrants for the profit. Thus, the market crashes quickly, and possibly results in collapse of an otherwise healthy project. As a result of this common scenario, the staking model is often flawed and not serving its purpose. New projects that want to incentivize long term holding do not need to worry about developing these staking technologies into their contracts, they can simply apply for whitelisting to CryptoBonds, and if their token is approved after review by the CryptoBond team, they can both provide long-term liquidity on Uniswap to their community, and a gain on their SYNC position once the bond matures.

A mechanism for founders to promise long term stay When founders of a new coin or technology are trying to get their feet into the door in the Crypto space, it is hard to gain traction with all sorts of scams happening on a day to day basis. New tokens are viewed speculatively by the community, and a large amount of research should be done on whether the team is experienced, will stick around, etc. Showing a long term lockup of liquidity transparently through CryptoBonds could generate confidence with the community.

Forever Functional At the end of the Fair Release Schedule, ownership of the SYNC contract will be terminated by setting the owner of the smart contract to the zero address, effectively preventing any administrative changes to the contract ever again, and not allowing any SYNC to be minted by anything other than a CryptoBond maturing. **As long as the Ethereum blockchain is running, CryptoBonds will always be adjusting and fighting to pull investors in for great interest rates at a long term stake.**

Proof of liquidity flaw Uniswap's decentralized exchange requires pairs to be added for liquidity. This gives new projects initial market value. For example, 100 ETH added with 1 million new tokens would list at the total value of the ETH divided by the total amount of coins paired with it. This gives initial value with no guarantee for liquidity lock. There is no known work-around to discern nefarious contracts vs. legitimate ones. Every day new tokens launch, are marketed, pumped and then the liquidity pool is drained, resulting in massive losses for those who weren't able to escape.

Administrative White-Listing The CryptoBond contract allows the team to approve Liquidity Provider Token pairs on an individual basis. Not all LPTs will be available to be used within a CryptoBond. Although there will be many LPTs allowed when the CryptoBond contract releases, due to past problems with

Uniswap and nefarious/burn tokens, the CryptoBonds team will individually audit all incoming requests for LPTs. If sometime in the future it is determined that there is no risk to the CryptoBond contract despite this, the team has the ability to allow trading of any LPT.

3 Crypto Bond Interest Rates

The SYNC network balances itself through daily, self-correcting interest rates. Although CryptoBond interest rates change daily, **a CryptoBond's interest rate is fixed and locked in when it is created.**

Interest rates of bonds depends on three factors.

1. Total supply of sync in the market.
2. Duration of bond
3. Total bonded amount of that liquidity pair token

The motivation of having multiple facets to CryptoBonds interest rates is that it allows diversity amongst the offered CryptoBonds, which allows for a rich secondary trading market.

3.1 Base Interest Rate

This is the main driver of equilibrium to keep SYNC going up and down, both inflating and deflating the currency. Inflation provides the utility of bond-making and attracting new investors with higher interest rates, and deflation provides both stability and value to the coin. This behavior creates a balanced rhythm.

$$YesterdaysInterestRate \cdot \frac{TS_{today}}{TS_{yesterday}} = TodaysInterestRate \tag{1}$$

TS = SYNC Total Supply

3.2 Duration

For the success of a stable SYNC, it is more desirable to lock for longer, and it is important to make sure that compounding shorter-term bonds do not outperform those that are longer. We define the following equation where:

t = term in years
k = risk
R = currently offered base rate
p = liquidity pair bonus

$$(1 + (\mathrm{R} + \mathrm{p}) + \mathrm{k}(4\mathrm{t}\text{-}1))^{4t} = BondInterestRate$$

(2)

The risk k has been decided by the SYNC team as a linear constant approximator that closely matches reality. The more duration risk, the higher the interest rate. This calculation scales with time, ensuring that even under a compounding event of lower term bonds, higher term bonds will always perform marginally better. This constant we define as k = 0.0005 and it will never change. In the traditional economic markets, there are additional, subjective changes that also affect interest rates, apart from the numerical calculations. In the SYNC network, the notion of subjectivity, agendas, or world events will not ever affect interest rates – they will always be linearly beneficial with term.

On the first day of release, the CryptoBond contract will offer a 4% base interest rate. Here is what the above calculation provides us for the different term tiers and an initial §1000 investment.

(Due to solidity rounding, interest rates at launch may slightly vary)

TERM	AMT	OVERALL ROI	FINAL AMT
90 Days	§1000	4%	§1040.00
180 Days	§1000	8.264%	§1086.26
1 year	§1000	17.662%	§1176.66
2 years	§1000	40.585%	§1405.85
3 years	§1000	70.564%	§1705.64

3.3 Liquidity Pair Incentive Rate

In order to incentivize investors to create Crypto Bonds in token pairs that may be decreasing in bonded volume, an interest rate multiplier is performed. It reacts in the inverse of the SYNC total supply – as the amount bonded in liquidity pair XXX-YYY decreases, the interest rate will approach a base rate adjustment of .1%. This is a relatively small adjustment, but makes a difference for long-term bonds. For example, although it may only add a maximum of .1% to the 90 day CryptoBond, that scales up to be around 2% added to the 3yr bond rates.

As more money is liquidated from a certain liquidity pair, we will attract users with bonus rates to re-invest into bonds with that liquidity pair.

$$min(.001 \cdot \frac{LPT_{yesterday}}{LPT_{today}}, .001) = InterestRateBonus \tag{3}$$

LPT = Liquidity Pair Total Supply

3.4 Quarterly Returning CryptoBonds

Quarterly CryptoBonds are an option for investors that want to collect part of their returns per-quarter. The interest rates are lower than a maturity bond, but unlike a maturity bond, they will provide investors with faster returns.

Quarterly dividends are only an option for 1 year bond lengths or longer.

The quarterly interest rate is computed similarly to the way duration rates on maturity bonds are calculated:

$$\begin{gathered} t = \text{term in years} \\ k = \text{risk} \\ R = \text{currently offered base rate} \\ p = \text{liquidity pair bonus} \end{gathered}$$

$$(R+p) + k(4t\text{-}1) = \text{QuarterlyInterestRate} \tag{4}$$

Collecting Quarterly Returns with an initial §1000 investment assuming a base interest rate of 4% and ignoring any modifiers:

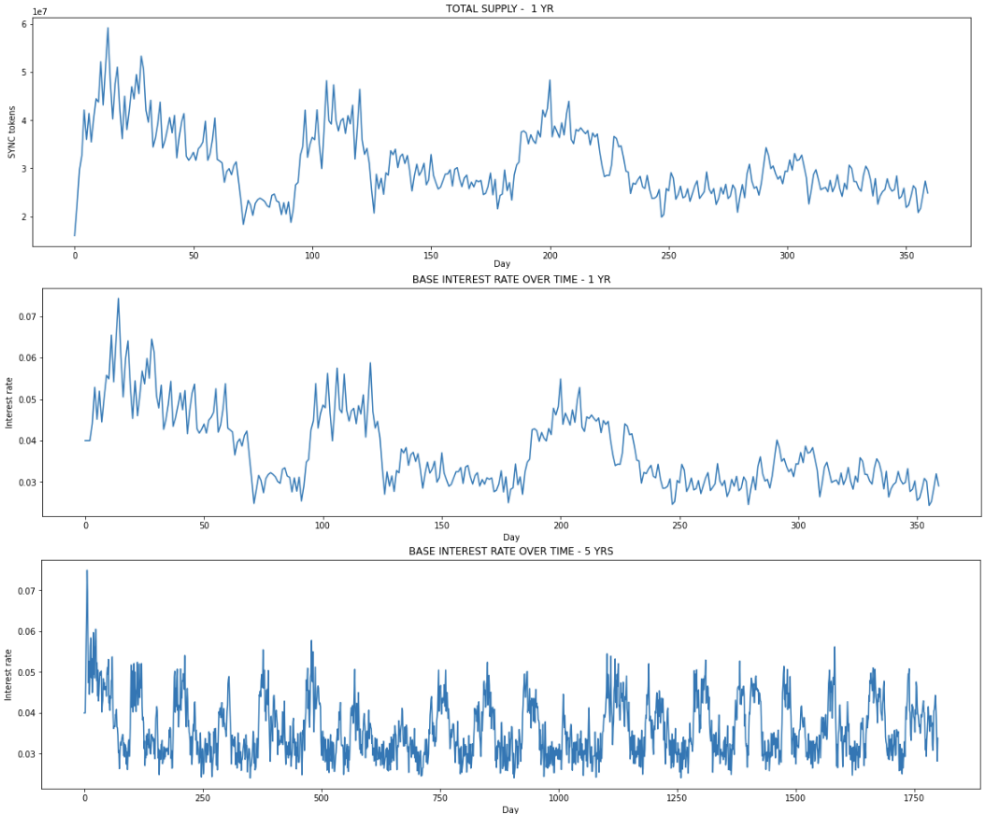
TERM	AMT	Q. ROI	TOT. ROI	Q. PMT	PMTS	LAST PMT	FINAL AMT
1 year	§1000	4.15%	16.6%	§41.50	4	§1041.50	§1166.00
2 years	§1000	4.35%	34.8%	§43.50	8	§1043.50	§1348.00
3 years	§1000	4.55%	54.6%	§45.50	12	§1045.50	§1546.00

4 How SYNC Network Interacts With The Market

SYNC Network incentivizes to strengthen liquidity pools. The idea behind this is the more liquidity that is locked via Crypto Bonds directly correlates to more market certainty for investors. SYNC Network will be the standard for risk mitigation by incentivizing founders to use our network. Being listed on Crypto Bond will signify that the project has been thoroughly vetted by the Sync team as well as a third-party industry leading smart contract auditor. When a new contract is added, the founding team deposits liquidity into both sides of the tradeable pair. When doing this the coin sets its initial value along with the depositor's liquidity while receiving Liquidity Provider Tokens (LPT's) from Uniswap which also represents the corresponding liquidity provided. Sync Network introduces

a tradeable proof of Long-term Position via Crypto Bonds. After a project provides liquidity to Uniswap and receives their pool tokens, the pool tokens are then paired with an equal monetary evaluation of Sync tokens and time locked in a fully transferable and tradable Crypto Bond. This allows founders to prove that the liquidity provided to Uniswap will remain in Uniswap for the full duration of the Crypto Bond's term. Once a Crypto Bond is created it cannot be broken, but it can be sold to another investor. While the Crypto Bond is in effect the LPT's earn Uniswap trading fees and the paired Sync tokens earn trustless interest.

5 The Simulator



Using a sophisticated testing suite for the macroeconomics inside of the SYNC network, we have modeled what we consider would be under normal conditions of CryptoBond creation (SYNC burning) and maturation (SYNC minting) over long timespans. It is apparent that the formulas used by the CryptoBond contract result in steady pulses of both inflation/deflation of interest rates and total supply. The simulation includes the first year of the FRS minting coins into

existence, and also models incoming users with realistically weighted probabilities regarding their amt and duration that they are creating CryptoBonds with. Despite the SYNC token being overall inflationary, it does not seem that the total supply will ever get out of control, as the CryptoBond contract is always raising interest rates to attract new users, who will burn their coins during their stake.

We cannot however predict the effect of SYNC price and FRS behaviors that may stray from what is predictably possible.

6 NFT Trading and the secondary CryptoBond Exchange

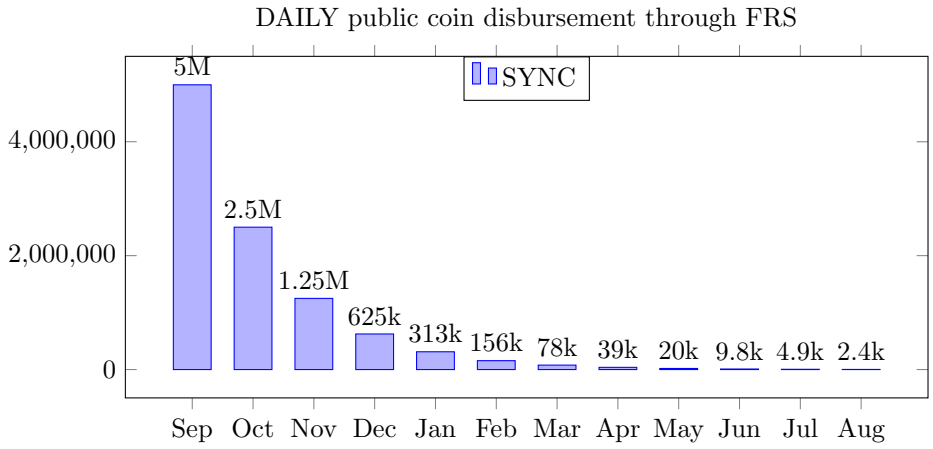
6.1 ERC-721 Compliant

The ERC-721 CryptoBond contract contains a vanity tokenURI endpoint which will generate and serve both artwork of the specific CryptoBond that is held, and also the difference attributes that the CryptoBond is composed of such as 'price upon maturation', current value, liquidity provider token type, and more. This metadata is used by wallets to display NFT tokens, and also by sites like opensea.io – which are open marketplaces where you can view, post and sell your NFTs.

6.2 CryptoBond Marketplace

CryptoBonds are an NFT token and therefore are unique, tradeable, and sellable. The bonds will be tradeable on any NFT marketplace such as Opensea.io. The CryptoBond team is also working on an exclusive marketplace for users to trade CryptoBonds.

7 Fair Release Schedule



7.1 Release schedule

Every day for one year, the Fair Release Schedule (FRS) contract releases an amount of SYNC tokens. The contract will release a share of newly minted tokens every 24hrs. In order to receive the newly minted tokens, you will need to place ETH in the daily SYNC pool. At the end of the 24-hour period the total amount of SYNC will be divided proportionally among the ETH contributors for the day.

Every 30 Days the contract emission halves, increasing the price due to exponential supply decrease. at 12 months, the contract will stop producing coins, and future SYNC will only be minted through the maturation of Crypto Bonds.

There will be a grand total of 12 halvings. By the twelfth month only 2,441 SYNC will be available daily. The total supply after one year; not including the interest payouts will be 616 million coins.

See the above graph for the specific amounts of disbursement.

7.2 Allocation to team

On day one of the SYNC Network release, there will be 10 million minted SYNC - 5 million proportioned to the public's daily ETH contributions. The 5 million will go to the SYNC team to balance the market by creating Crypto Bonds which will eventually be publicly available to trade. The SYNC team will use up to HALF of the daily ETH to go directly to bond creations for that day. In the very beginning, the SYNC dev team will be developing a front-end application where Cryptobonds can be traded, and using up to half of the days ETH to start giving value into the SYNC network, by becoming a CryptoBond market maker. These bonds the team makes will start becoming available to buy on a secondary market, including dividend earning CryptoBonds.

15 percent of SYNC from the SYNC team's daily half, and 15 percent of the daily ETH will be taken as a dev fee – to go towards operations.

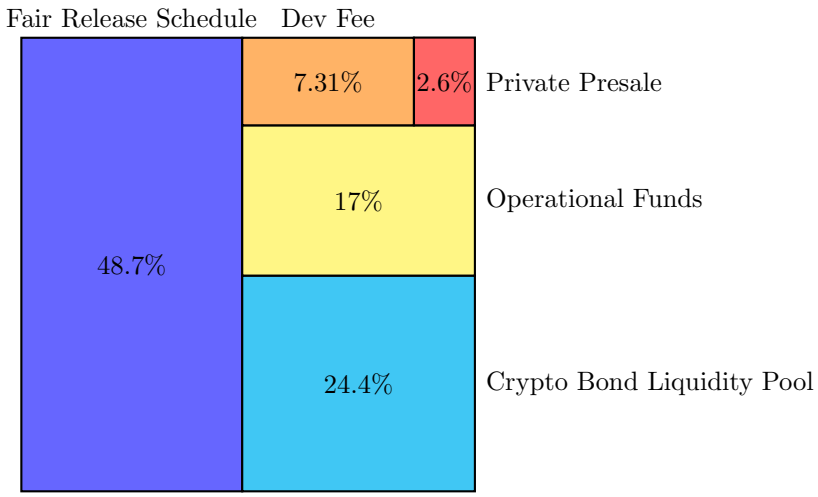
After each day, the coins minted will arrive in the daily pool members' ERC-20 compatible wallets. The Coins are immediately available for trade, transfer or bond creation using the CryptoBond smart contract. The SYNC network team will also be developing and maintaining a frontend application to aid in the creation, calculation, and analytics of your Crypto Bonds. However, this front-end application does not interfere with the decentralized nature of the SYNC network – as long as the ethereum blockchain is running, SYNC will always be fighting to pull investors in for great interest rates for a long term stake.

7.3 Minting Schedule

Launch Phase (done)
15 million coins - Private presale
1 million coins for initial uniswap listing
FRS (1 yr)
600 million coins - Fair release

SYNC does not have a finite amount. Throughout the life of the CryptoBond contract, SYNC will be minted and burned depending on incoming/maturing CryptoBonds.

7.4 Financial Plan



8 Road Map

June-August 2020
Development of SYNC ERC-20 token Contract
Development of Crypto Bond ERC-721 NFT Contract

September-October 2020
Private Presale and SYNC token launch
exchange listing commitments
community outreach and initial marketing

November 2020
Security audit
Crypto Bonds contract Launch on Main Net
Development of layer 2 platform and DAPPs

Q1 2021
Layer 2 is added to the platform (more details later)

8.1 Disclaimer

TOKENS ARE NOT SECURITIES. TOKENS ARE NONREFUNDABLE. TOKENS ARE NOT FOR SPECULATIVE INVESTMENT. ANY INCOME/PROFIT GENERATING REFERENCES DO NOT APPLY TO THE SYNC TOKENS IN ISOLATION, ONLY THE AMOUNT OF COINS RECEIVED UPON CRYPTOBOND MATURATION. SYNC TOKEN IN ITSELF, SEPARATELY FROM THE PLATFORM, DOES NOT ALLOW PURCHASERS TO BENEFIT MONETARY FROM PURCHASING AND/OR HOLDING THE TOKENS AND DOES NOT IN ITSELF GENERATE PROFIT FOR ITS USERS. NO PROMISES OF FUTURE PERFORMANCE OR VALUE ARE MADE WITH RESPECT TO TOKENS, INCLUDING NO PROMISE OF INHERENT VALUE, AND NO GUARANTEE THAT TOKENS WILL HOLD ANY PARTICULAR VALUE. TOKEN SALE IS NO SOLICITATION OF INVESTMENT.

SYNC TOKENS ARE USED ONLY AS THE INSIDE UNIT OF CRYPTOBONDS. SYNC TOKENS WILL BE RECEIVED WITH INTEREST APPLIED AT CRYPTOBOND MATURATION BUT THERE IS NO EXPECTATION OF PROFITS FROM SUCH AN INVESTMENT WITH REGARD TO THE UNDERLYING VALUE OF SYNC. THE SYNC TOKEN FRS IS NOT OPEN TO U.S. CITIZENS, U.S. PERSONS, AUSTRALIA, CANADA, CHINA AND SINGAPORE CITIZENS/RESIDENTS. IF YOU ARE NOT SURE IF YOU ARE A U.S. CITIZEN, U.S. PERSON, AUSTRALIA, CANADA, CHINA AND SINGAPORE CITIZENS/RESIDENTS YOU ARE ADVISED NOT TO PARTICIPATE IN THE SYNC TOKENS FRS.

References

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2. Crypto Briefing - A Guide to Vulnerabilities in Decentralized Finance, https://cryptobriefing.com/guide-vulnerabilities-decentralized-finance/. Last accessed 11 Sep 2020