

Dirac Finance Whitepaper

On-chain Derivatives Strategies

Sep 10, 2023



Foreword

As Decentralized Finance (DeFi) users for several years, we have observed that there are mainly two different types of yield-generating decentralized applications (dApps): the ones that propose safe but modest yields, and the ones that show high but unsustainable yields. There is no dApp today proposing high and sustainable returns, and in our point of view, this is one of the reasons that DeFi is still a niche struggling to attract a larger number of individual and institutional investors.

We strongly believe that with more attractive and safe yields, DeFi can scale and in a near future, become a leading actor, coexisting and interacting with Traditional Finance (TradFi).

This is why we have created Dirac Finance, to redefine yield generation by combining TradFi sophistication with DeFi accessibility.

In its first version, Dirac Finance enables any DeFi investors to deposit digital assets from different chains and receive yield through options and structured product strategies, proposed by experienced Institutional-Grade options traders and structurers coming from TradFi, in a transparent, safe, and decentralized way. The sustainability of the yield is insured through a set of innovative risk mitigation algorithms, adapted to DeFi context. In further versions, the yield will be generated through more sophisticated products.

By making DeFi and TradFi working in synergy, and deploying the best of those two facets of Finance, dApps like Dirac Finance can unlock new horizons for yield generation, making all our ecosystem more attractive and more competitive.

This journey is collaborative and requires the support, contribution, engagement of a community that shares our vision. Join us as enthusiasts, investors, or advisors. With your help, Dirac Finance can build one of the first Institutional-Grade protocols that can set new benchmarks in yield generation.

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1. Introduction

The pursuit of sustainable, organic yields has remained a focal point for a diverse spectrum of investors across financial markets. In the domain of Traditional Finance (TradFi), these coveted yields are meticulously engineered through a multitude of intricate methods, often relying on the adept utilisation of derivatives.

In the dynamic arena of crypto-based Decentralised Finance (DeFi), the bedrock of dependable yield generation has centred on passive deposit alternatives, epitomized by platforms like Aave and Uniswap. However, as these markets evolve and gain momentum, yields have encountered growing pressures, resulting in a gradual decline.

Realizing enhanced yields necessitates harnessing a diverse array of options spanning both Centralized Finance (CeFi) exchanges and DeFi Automated Market Makers (AMMs). Yet, for investors who lack an intricate understanding of the innate risks within the crypto landscape, constructing well-balanced and hedged solutions becomes a formidable challenge.

In recent times, Options and Structured Products vaults have entered the DeFi market, aiming to provide higher yield opportunities for investors, in an easy way, with varying degrees of abstraction for users. However, the majority of these solutions present high-risk vault strategies behind the scenes, such as selling naked options, failing not only to deliver promised high APYs but also jeopardizing investor principal. Consequently, this burgeoning market has remained subdued, characterized by the low Total Value Locked (TVL) in them.

Enter Dirac Finance—a pioneering Onchain Derivatives dApp on a mission to seamlessly integrate some of the most acclaimed yield generation solutions into the DeFi landscape. Our goal is to harness the innate high volatility of the crypto-currency market to make impressive returns accessible to all. We are committed to offering meticulously designed high-yield vaults, encompassing a spectrum from simple option strategies to structured products and principal-protected coupon notes.

To mitigate risks, enhance yields, and safeguard principals, Dirac Finance infrastructure employs intelligent decision-making algorithms and precision-targeted hedging techniques. Our commitment to user-friendliness ensures that complexity remains elegantly concealed behind a streamlined trading interface. Investors can effortlessly deposit their assets into selected vaults, with these assets dynamically deployed into sophisticated option strategies.

In this paper, we embark on a journey to explore the transformative potential of Dirac Finance, illuminating how it seamlessly bridges the chasm between TradFi sophistication and DeFi accessibility. Our aim is to empower investors with a secure pathway to lucrative yields in the ever-evolving crypto landscape.

2. What is Dirac Finance

Dirac Finance stands as a derivatives protocol with an unwavering focus on delivering high, sustainable organic yields to investors. Its mission is to seamlessly integrate some of the most renowned strategies from the TradFi realm into the crypto space. At the heart of Dirac Finance's innovation lies its application of risk mitigation techniques, sophisticated decision-making algorithms, as well as pool hedging

solutions, diligently designed to safeguard investor principal and elevate yields across all vaults. With its commitment to providing a secure avenue for high-yield generation, Dirac Finance aims to become the preferred platform for investors seeking both capital preservation and sustainable substantial returns.

3. Product Offerings

Dirac Finance's product suite takes the form of Vaults, each carefully crafted to encapsulate distinct derivatives strategies based on options and structured products. The primary objective of these strategies is to provide investors with robust principal protection while simultaneously fostering yield growth. Our array of Vaults caters to diverse market trends and varying risk appetites, offering investors the flexibility to subscribe to multiple Vaults at their discretion.

Integral to our Vaults' operations is Dirac's intelligent decision algorithm, orchestrated by the Dirac Finance DAO. This algorithm takes centre stage, ensuring that every position is meticulously considered before execution.

In addition to intelligent decision-making, all Dirac Vaults benefit from portfolio-wide hedging actions, another integral component masterminded and automatically overseen by the DAO. This comprehensive risk management approach is designed to safeguard investor interests across the board.

Dirac Finance's roadmap unfolds in three distinct phases:

Phase 1: In this initial go-live phase, we introduce three distinct Vaults, each tailored to address specific investor needs:

- 30-day downside option selling, coupled with Dirac Decision Making Algorithm (DDMA) and Dirac Global Hedging Algorithm (DGHA).
- 30-day topside option selling, complemented by DDMA and DGHA.
- Crypto Linked Notes, offering principal protection alongside DDMA and DGHA.
- Full collateralization is a cornerstone of this phase, ensuring that investors face no undue exposure.

Phase 2: In the second iteration of our protocol, we expand our product offering to encompass structured products and notes based on second-generation exotic options. This phase is characterised by:

- Structured products and coupon-bearing notes with crypto underlyings, introducing a diverse range of yield-enhancing Vaults.
- Partial collateralization will be employed for more efficient asset usage.

Phase 3: In this advanced phase, we delve into the realm of yield-enhancing products that leverage second-generation derivatives, including accruals and various types of TARFs.

In this phase, we introduce dynamic collateralization based on our advanced margining algorithm. Besides security for investors and counterparties, it'll make the use of assets on chain much more efficient and dynamic.

With these three pivotal phases, Dirac Finance is poised to deliver an array of innovative products that cater to the evolving needs of crypto investors, offering a blend of security, yield, and sophistication.

Important note:

Dirac Finance is decentralizing both deposits and strategies: any derivatives trader can propose a strategy to be incorporated into the Dirac Finance infrastructure, including vaults and the entire risk mitigation framework. Proposed strategies will be submitted to DAO voting. Once a strategy is running on mainnet, strategists receive 2% of the profits generated by all the strategies they have proposed and which have been selected.

4. Dirac Decision Making Algorithm (DDMA)

The DDMA stands as a straightforward yet effective algorithm anchored in market momentum analysis. Its primary responsibility is to determine the opportune conditions for Vaults to initiate positions. Following meticulous design, rigorous testing, and successful implementation by the DAO, the DDMA is seamlessly integrated into our Vaults, operating automatically across the platform.

During extensive testing phases, the DDMA consistently demonstrated remarkable results. Notably, it not only enhanced overall returns but also played a pivotal role in safeguarding investor principal, a dual achievement that underscores its significance within Dirac Finance.

=> Decision Making partner: [Block Scholes](#)

5. Dirac Global Hedging Algorithm (DGHA)

The DGHA, another pivotal component, is a dedicated hedging algorithm meticulously designed and rigorously tested by the DAO. Once deployed, it operates with complete autonomy. At its core, the DGHA is engineered to address the high-risk elements inherent in the aggregated positions across all Vaults.

This encompassing approach to risk management includes delta balancing and option hedges, among other strategic measures. This encompassing approach to risk management includes delta balancing and option hedges, among other strategic measures. These actions are strategically orchestrated to shield investors from potential exposures, further fortifying the robust risk mitigation framework that defines Dirac Finance.

⇒ Current Delta Hedging protocol: [D8X](#)

6. Dirac Master Staker Algorithm (DMSA)

This is another algorithm designed to maximize yields by making sure that no part of any principal is left idle at any point in time.

The DMSA is based on one of DeFi's core characteristics, which is composability. This algorithm works in conjunction with DDMA. Effectively, before (respectively. after) a structured product position is initiated,

the deposit (resp. collateral) can be transferred to a secure protocol in order to generate additional yield. The protocols selected must meet certain conditions: 1/ be able to deposit and withdraw at any time, and 2/ have a low collateral exposure, typically Lending protocols.

⇒ Current Master Staker protocol: [Keom](#)

7. The Pricing Issue

The art of pricing derivatives is a well-established and mature discipline within TradFi. Financial institutions have dedicated substantial resources and recruited top-tier engineers to master the intricate nuances of derivative pricing across diverse asset classes. However, the landscape of crypto derivatives is still very much in its infancy and is still far away from any maturity in the field of pricing. While there is certainly a lack of comparable resources to be spent in this field, it is also the fact that the crypto world also presents unique challenges, primarily attributed to the extreme volatility characterizing these digital assets.

This volatility factor exerts a significant impact on the valuation of crypto derivatives, affecting a wide spectrum of derivatives, including structured products. At Dirac Finance, we place a paramount emphasis on pricing accuracy. Precise pricing holds a twofold advantage, enabling us to execute trades at the right price and implement effective hedging strategies. As part of our commitment to excellence, Dirac Finance is actively investing in the development of crypto volatility surface modelling and the pricing of derivatives across the entire spectrum of crypto assets. This dedication underscores our relentless pursuit of precision in every aspect of our protocol.

8. Security Matters

At Dirac Finance, we firmly believe that the most profitable strategy should not come at the expense of security. Our guiding principle is that security is paramount, and we uphold this commitment with firm dedication. In the world of DeFi, investors deserve nothing less than the highest level of security. Our philosophy dictates that the best strategy is one that prioritizes security as its foundation, and then ensures robust capital protection and yield generation for investors.

To actualize this vision, Dirac Finance channels substantial resources into the development and testing of our protocol. Our meticulous approach guarantees that every line of code we deploy undergoes rigorous auditing, meeting the highest standards set forth by the DeFi community. This uncompromising dedication to security serves as the bedrock of our mission to provide investors with a high level of trust and confidence in the Dirac Finance ecosystem.

9. Token and Decentralised Autonomous Organisation (DAO)

a. Dirac Finance DAO

Dirac Finance operates as a fully decentralized ecosystem, governed entirely by its Dirac token holders. Within the Dirac community, every member possesses the agency to propose enhancements, innovative

strategies, and upgrades to the Dirac DAO. Such proposals hold the power to initiate a community-wide vote, provided they garner a requisite quorum of the total Dirac token supply.

The governance framework extends to various crucial themes, each subject to token holder voting:

- New Derivatives and Structured Products:

Exploring novel derivatives and structured product offerings to enhance the protocol's capabilities.

- Mathematical Finance Models:

Delving into the realm of mathematical finance models to refine and optimise the pricing and performance of our offerings.

- Blockchains and Layer 2 Deployments:

Evaluating the integration of diverse blockchains and Layer 2 solutions to expand Dirac Finance's reach and accessibility.

- Smart Contracts:

Continuous improvement of smart contracts to bolster the security and efficiency of the ecosystem.

- Marketing and Communication:

Shaping the marketing and communication strategies to ensure wider community engagement and understanding.

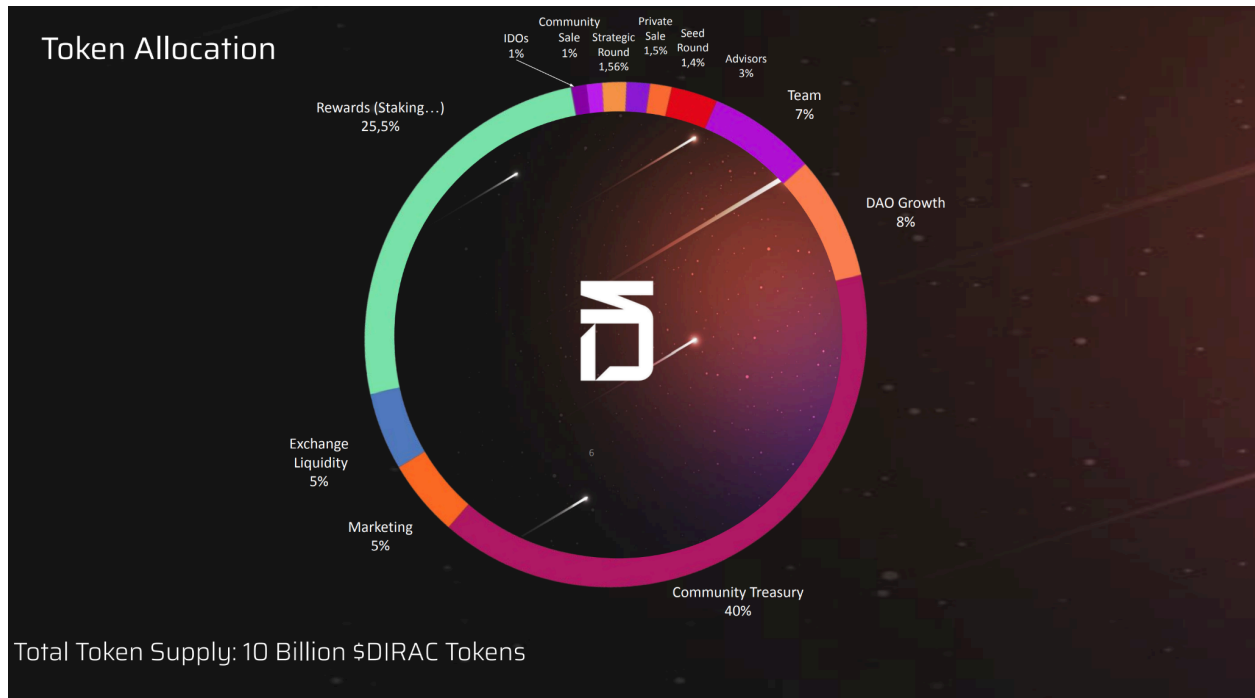
- Rewards and Incentives:

Tailoring rewards and incentives programs to maintain an attractive environment for users and contributors.

- Remuneration:

Deliberating remuneration structures that align with the sustainable growth of the protocol.

b. \$DIRAC Token



A total of 10 billion Dirac tokens, called DIRAC, have been designated to benefit the community and fortify the protocol's sustainability:

40% for the Community:

The lion's share of the token supply is dedicated to serving the broader Dirac community.

7% for the Team:

Allocated with a lock-up period and a structured vesting schedule of 20 months, with a cliff of 6 months.

3% for the Advisors:

Allocated with a lock-up period and a structured vesting schedule of 12 months, with a cliff of 6 months.

8% for Dirac DAO Growth:

Allocated to empower the DAO, ensuring that it remains well-equipped to govern the protocol effectively.

1,56% for the Strategic Round :

Allocated with a lock-up period and a structured vesting schedule of 6 months, with a cliff of 1 week.

1,5% for the Private Sale:

Allocated with a lock-up period and a structured vesting schedule of 12 months, with a cliff of 1 week.

1,4% for the Seed Round:

Allocated with a lock-up period and a structured vesting schedule of 18 months, with a cliff of 3 months.

1% IDOs & Community Sale 1%:

The IDOs/Community aims to provide support to the project's launch and initial activities, allowing a broader audience to acquire tokens. Additionally, it aims to increase the decentralisation aspects of the protocol through acquiring a higher number of token holders.

5% for Exchange Liquidity:

This allocation is designated for listing on decentralised exchanges (DEX) and centralized exchanges (CEX).

5% for Marketing:

This allocation is for promoting and creating awareness. These funds can be used for various marketing activities, including partnerships and community engagement.

25,5% Rewards (Staking...):

An attractive staking system will be set up from the Token Generation Event; this system will be linked to the voting process via DAO. Participants in the staking system will be rewarded for their contribution to the governance of the protocol.

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