

deca.finance

A Decentralized Banker Service for Online Casino

1. Introduction

Gambling is one of the oldest industries in history. In 2020, the global gambling market will exceed 440 billion US dollars, with a compound annual growth rate of 5.6%. In every leading blockchain platform such as ETH, TRON, and EOS, there are a large number of gambling applications, and lots of them are top dapps.

deca.finance commits to reforming online gambling with decentralized finance (DeFi). By building a liquidity pool with smart contract over Ethereum, we provide a decentralized banker function to all online games and turned the banker function into a SAFE, ANONYMOUS, and HIGH-YIELD investment.

deca.finance cooperates with top online casino operators all over the world. By collecting the gambling data down to every win or loss by every player and uploading the data on the blockchain, deca can dynamically calculate the return for each game and evaluate it as an investment. This "money for data" model is applicable to all asset management fields that require agents, such as venture capital, private equity, and public equity funds.

The online gambling industry is legal and licensed in the UK, Germany, Sweden, Greece, Belgium, Malta, Estonia, Belarus, Curaçao, the Philippines, Serbia, Ghana, and other countries. deca only cooperates with online gambling operators with legal licenses.

2. Product

In all games, there are two roles: banker and player. Normally the casino plays the role of banker itself. But as online gambling based on crypto tokens developed rapidly, online gambling operators need the ability and funds to implement crypto games.

That's the chance for crypto adopters to invest in the online gambling industry. By building a non-custodial liquidity pool with smart contract over Ethereum called "Banker Vault",

deca.finance provides a crypto pay solution and a decentralized banker function for online gambling operators. Players can play games with supported crypto tokens and investors can get a return every time when the players lose their bet. As shown below.

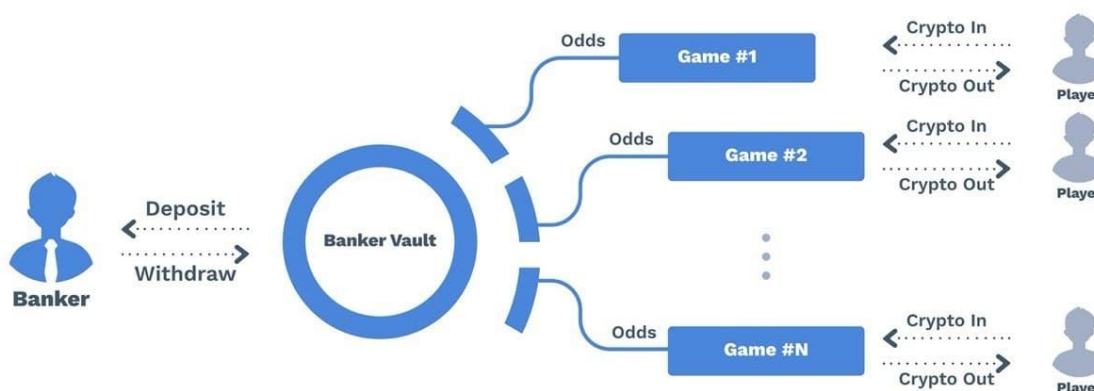


Figure 1: Decentralized Banker Functions

3. Profit

3.1 Deposit

To earn dividends, investors need to deposit assets and DBanker tokens into Banker Vault smart contracts at a preset leverage ratio(see section 4.2). DBanker is the governance token of deca.finance(see section 5).

Currently supporting assets: **USDT**, **USDC**, **DAI**, **wBTC**, **ETH**, and **Link**.

To deposit an asset without DBanker is permitted, then a request to purchase DBanker will send to all bankers who have DBanker stored inside deca.finance, if no one is willing to sell their DBanker, then the action of the deposit will fail and the asset will be withdrawn.

3.2 Time Deposit

When investors deposit assets, they can choose the following period as a time deposit and get different levels. A higher level will get better dividends.

- L0: Assets can be withdrawn at any time;
- L1: The deposit period is 5 days;
- L2: The deposit period is 30 days;
- L3: The deposit period is 90 days;

Time deposit cannot be withdrawn at any time. Investors need to make an appointment within the deposit period, and automatically withdraw after the period expires. If there is no appointment within the period, assets will roll into a next period.

3.3 Dividends

deca.finance calculate the revenue and send dividends to all bankers at 00:00 (UTC+0) every day as the following ratio:

- 10% is divided among L0 Banker according to deposited assets;
- 15% is divided among L1 Banker according to deposited assets;
- 25% is divided among L2 Banker according to deposited assets;
- 50% is divided among L3 Banker according to deposited assets.

Warning: If there is a temporary loss in the settlement of a certain game in that day, all levels will bear 25% of the loss.

Warning: the deposited assets need to meet the leverage ratio or dividends and liquid mining tokens will be calculated automatically according to the lower one.

The asset withdrawal fee is 0.5%.

4. Risk Management

Gamble is a game based on randomness. In a view of long term, random variables converge in probability to the expected value, and the banker's profit is predictable. But there is a risk of temporary loss.

Temporary loss is inevitable. We cannot eliminate risk, but we can control the loss. deca.finance introduced two mechanisms to control temporary loss: TUB and Leverage Ratio.

4.1 TUB(Temporary User Bonus)

TUB is a temporary bonus pool for each game. It works as an isolated pool and settles every bet for each game. Bonuses are paid from TUB to winners and bets are gathered from losers to TUB. As shown in figure 2.

deca.finance automatically calculates the amount of pool based on the user number and cash flow of each game. The size of a single TUB should not exceed 5% of the total size of Banker Vault.

At the start of every operation period(e.g. 24hours), Banker Vault estimates the balance of each TUB, gather profit or supplement funds if the balance is lower than the calculated amount threshold.



Figure 2: TUB

Therefore, the profit and loss of a single game in a single operating period only affect the TUB of this game. If a temporary loss happens at the end of the period, investors can see it in the dashboard and adjust the investment decision. If the extreme scenario happens in which all the funds in TUB are lost, this TUB will **NOT** be replenished and the corresponding game will be suspended temporarily.

Therefore, the temporary loss is limited, controllable, and visible to all investors.

4.2 Leverage Ratio

deca.finance is an asset management tool for investing in alternative assets (casinos). We need to work below a proper leverage ratio for risk management.

For deca.finance, the total value locked in Banker's vault can be seen as the total assets in a balance sheet, and the total value of our governance token DBanker locked in Banker's vault can be seen as the equity in a balance sheet. So we can calculate the equity multiplier in the formula below:

$$\text{Equity Multiplier} = \text{Total Value Locked} / \text{Total DBanker Value Locked}$$

Equity multiplier affects the profit rate and operating risk simultaneously. In Basel III, it is recommended that the capital adequacy ratio for banks and other financial institutions should be less than 8%. Therefore, equity multiplier should be 100:8.

deca.finance suggests following the instructions from Basel III, the leverage ratio will be set at 8% at the beginning of testnet and can be adjusted during governance procedure.

4.3 Other Solutions

deca.finance is looking forward to the probability of risk management through asset securitization, swap, and other financial instruments.

5. Governance

As a DAO, deca.finance issues a governance token named DBanker. DBanker holders have investment and dividend rights, governance rights and other rights.

5.1 Investment and Dividend Rights

DBanker holders have the right to invest the corresponding amount in Banker Vault according to the leverage ratio stipulated in the contract and receive dividends from operating income.

5.2 Governance Rights

DBanker holders have the right to join our decentralized community and participate in proposals, discussions, and on-chain voting.

The adjustment of the following parameters in deca.finance should be voted:

- Add a new game;
- Remove an existing game;
- Add a new type of supported token for an existing game;
- Remove a supported token for an existing game;
- Adjust withdraw fee;
- Adjust deposit times and dividend rate for each level;
- Adjust liquid mining rate for each level(see section 6.1);
- Adjust the leverage ratio;
- Adjust the voting threshold (the initial voting threshold is 10,000, and investors who hold less than 10,000 DBanker tokens cannot vote).

5.3 Holder Rights

DBanker holders can also enjoy the following rights:

- Information Rights: inquire the operating data of all games;
- Pre-Emptive Rights: DBanker holders have the preemptive right (buy tokens from other holders) inside deca.finance;
- Auto Yield Optimization: automatically optimize the leverage ratio to obtain higher returns;
- Registration Rights: If deca.finance is commercially operated and registered as a company when permitted by law, DBanker holders have the right to obtain corresponding equity according to the proportion of tokens they hold.

Important: Although some of the rights above are designed and named in accordance with shareholder rights, it does not imply that DBanker holders are shareholders of deca.finance.

6. Liquid Mining

The total amount of DBanker is 21,000,000 and distributed through liquid mining to all bankers. DBanker mining is divided into two following stages.

6.1 Phase I

In this phase, deca.finance recruits early participants for bankers. Participants can deposit supported assets to get DBanker. All deposited assets will be automatically transferred to Banker Vault after all DBanker tokens in this phase are distributed.

- Supporting assets: USDT, USDC, DAI, wBTC, ETH, Link

- Released tokens:
 - 40% of total DBanker tokens, i.e. 8,400,000 tokens;
 - 10% tokens will be transferred to the team account for operating expenses;
- DBanker tokens will be distributed to all investors every 100 blocks
- Mining Formula: $T_n = T / [\alpha * (B_n - B_0)]$
 - T_n : current mining reward
 - T : TotalIssuance = 6,300,000
 - α : Adjustment factor = 1/720
 - B_n : current block height
 - B_0 : Starting block height

Investor can withdraw their deposited asset anytime. No time deposit.

6.2 Phase II

During the operation of deca.finance, DBanker is released once a day. The mining amount released each day is determined according to the decay ratio and operating income factor, and is allocated to all banker according to the time deposit level and deposited assets.

- Supporting assets: USDT, USDC, DAI, wBTC, ETH, Link
- Released tokens:
 - 60% of total DBanker tokens, i.e. 12,600,000 tokens;
- DBanker tokens will be distributed to all investors at 00:00(UTC+0) every day
- Mining Formula: $T_n = T * \text{Decay} * \text{RevenueFactor}$
 - T_n : current mining reward
 - T : TotalIssuance = 12,600,000
 - Decay
 - α : Adjustment factor = 1/720
 - B_n : current block height
 - B_0 : Starting block height

Investor can withdraw their deposited asset anytime. No time deposit.

according to the size of the mortgaged assets and the pledge period.

In this phase, deca.finance recruits early participants for bankers. Participants can deposit supported assets to get DBanker. All deposited assets will be automatically transferred to Banker Vault after all DBanker tokens in this phase are distributed.

- Supporting assets: USDT, USDC, DAI, wBTC, ETH, Link
- Released tokens:
 - 40% of total DBanker tokens, i.e. 8,400,000 tokens;
 - 10% tokens will be transferred to the team account for operating expenses;
- Mining Formula:
 - DBanker tokens will be distributed to all investors every 100 blocks as the formula: $T_n = T / [\alpha * (B_n - B_0)]$
 - T_n : current mining reward
 - T : TotalIssuance = 6,300,000
 - $\text{Decay} = 1 / [\alpha * (B_n - B_0)]$
 - α : Adjustment factor = 1/25,200
 - B_n : current block height
 - B_0 : Starting block height
 - $\text{RevenueFactor} = \text{MAX}[0, \text{MIN}(1, R_d/R_q)]$
 - R_d : RevenueToday ;
 - R_q : RevenueThisQuarter
- Mining Distribution:
 - 10% is divided among L0 Banker according to deposited assets;
 - 15% is divided among L1 Banker according to deposited assets;
 - 25% is divided among L2 Banker according to deposited assets;
 - 50% is divided among L3 Banker according to deposited assets.

7. Notice

NOTHING IN THIS WHITEPAPER CONSTITUTES LEGAL, FINANCIAL, BUSINESS OR TAX ADVICE.

deca.finance does not run gambling business. We only provide a crypto tokens solution to online gambling operators with legal licenses. The crypto tokens used in deca.finance is not regarded as currency. INVESTORS SHOULD CONSULT YOUR OWN LEGAL,

FINANCIAL, TAX OR OTHER PROFESSIONAL ADVISER BEFORE ENGAGING IN ANY ACTIVITY IN CONNECTION HEREWITH.

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