8.Finance

TOKEN ECONOMY ANALYSIS REPORT

Implemented by GARUDA.AI team

GARUDA.AI provides a Verification and Analysis Service for Blockchain Solutions as well as a wide range of consulting services for blockchain-based projects.

GARUDA.AI Scientific Team has over 20 years of experience in industrial formal verification, algebraic modelling, cybersecurity, and model-based testing.

Founded by leading academics in the field of Computer Science GARUDA.AI is a one of the leading blockchain security companies that serves to verify the security and correctness of tokenomics models, smart contracts and blockchain-based protocols. Through the utilization of our world-class technical expertise, alongside our proprietary, own algebraic approach, and innovative tools, we're able to support the success of our clients with best-in-class security all whilst realizing our overarching vision in all facets of blockchain.

The purpose of the service is to help build a sustainable economy for the blockchain project 8.Finance, supporting every stage of the product development: starting from an idea and entering the market and scaling.

8.Finance platform provides a high-quality blockchain-based services in the field of decentralized finance, entertainment and education, developed for comfortable and mutually beneficial cooperation of 8.Finance with users and business partners.

Token economy analysis of the model has been provided using the algebraic approach and tools from the GARUDA.AI algebraic server. The formal model of the token economy has been created.

The formal model has been created in terms of the algebra of behaviors and formal actions of agents in the blockchain platform environment. The platform considers token exchange services for other cryptocurrencies and fiat funds, farming and staking services, and a gaming environment where users can earn tokens.

Modelling and the required number of model simulations with different input data determined the main trends in the development of interactions between agents. Scenarios of tokenomics behavior under the worst conditions and moderate sales growth were investigated.

The main conclusion of behavior modeling is that tokenomics is in equilibrium and self-governed. But, it is necessary to determine that it entirely depends on the plan to sell services above the critical limit, which is an essential condition for equilibrium and systematic growth of the token price.

Thus, it can be argued that the system is stable and resistant to unmanaged token leakage with the appropriate compliance with the sales volume. The corresponding full report on the model's formalization and creation, the simulation's input data, the structural diagrams of the interaction of the tokenomics elements, and the full text of the model code is provided in this document and its appendices.

CEO GARUDA.AI

Ph.D.
Tarasich Yu.

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MODEL DESCRIPTION

The 8F token is considered a means of interaction between platform users and services and a means for rewards and speculative activities.

The model determines the movement of the 8F token in the interaction environment in the vault system:

- Commissions vault
- Treasury vault
- Development vault
- Investment vault
- Liquidity vault
- Games vault
- Team vault
- Rewards vault

The receipt and expenditure of funds for vaults are shown in the corresponding graphs attached in Appendix 1.

The movement of the token is carried out in the services:

- DEX - buying, and selling of an 8F token, using own liquidity pool, and use of partners' liquidity pools.
- Staking - deposit of tokens
- Farming - replenishment of the liquidity pool
- Game activity

The movement of the token is also considered as a part of the gaming activity.

Tokenomics is deflationary, with no emissions.

The initial amount of tokens is 888.888.888.

Initial parameters of the token economy are presented in Table 1.

The main stakeholders who own tokens and can sell, buy and hold them are presented in Table 2. The table also contains shares of the stakeholders and prices for investors. The corresponding vesting schedule is shown in the table.

The model represents the actions of stakeholders selling tokens according to the distribution provided by the platform developers.

The Service Purchases

The purchase of tokens is determined by the demand for the services of the 8.Finance platform. The 8F sales plan needs to be determined by the 8.Finance team with an appropriate marketing plan, which is taken into account in the modelling as one of the main components of equilibrium and self-sustaining tokenomics.

The following sales volumes are considered as income data for modelling.

- Sales 8F - according to the sales curves provided by the model developers, namely:
  For the total sale of 8F, consider two curves from 1,000,000 to 5,000,000 and then decline from 5,000,000 to 4,500,000.

One of the tasks was to define the minimum of 8F sales for keeping the tokenomics equilibrium. It is illustrated on the graph in the Modelling results.

Separately, we consider the sales curves in the gaming service, in particular, 8G, sales volumes on marketplaces:

- **Sale of 8G tokens for USDT and for 8F.**

The same sales curves are used.

The first 12 months from 8,000 USD to 24,000 USD per month (and, accordingly, 8F for this amount) along a hyperbolic curve, for the next 12 months - a linearly proportional decline to 20,000.

We use the same curve for service from partner platforms.

- **Sale of assets on the game marketplace**

The first 12 months from 2,500 USD to 15,000 USD per month (and, accordingly, 8F for this amount) along a hyperbolic curve, for the next 12 months - a linearly proportional decline to 20,000.

- **Number of collected 8F tokens in the game**

The first 12 months from 80,000 to 240,000 8F per month on a hyperbolic curve, for the next 12 months - a linearly proportional decline to 200,000.

The volume of sales of 8G tokens and assets in the market does not consider the figures provided by the project team in the file "Revenue and Users Model" (see Appendix 3.)

Staking

When staking, passive income is considered, for which sell factor = 1, i.e. all passive income is sold by the user of the service (the most pessimistic scenario).

The reward is determined based on the fact that 8 days is 22.5% per annum and after 8 days - 45% per annum.

The ratio between staking participants is 75% (eight days), and 25% (more).

The staking modelling takes into account the demand component of the service - the higher the price of the token, the higher the demand for the service, the lower the price, then the more they withdraw from the service.

Farming

With farming, passive income is defined similarly to staking. The demand component is also taken into account.

Gaming Activity

The gaming activity is performed according to the interaction graph in Appendix 1. The relevant parameters and coefficients are presented in the model.

Using the above statements and restrictions, we build a formal model of the token circulation and perform modelling.

RESULTS OF MODELLING AND CONSEQUENCES

Thus, the success of tokenomics depends entirely on 8F sales volumes. It is important that the redemption of tokens for burning works.

At a low demand for 8F tokens (see Chart 1 in Experiment 1) and 8.Finance services, despite the buyback and burn mechanisms, the price of the token will decline.

It is important to understand the incentives and motivations for buying tokens in the first 20 months. Failure to maintain 8F sales volumes can lead to the failure of tokenomics.

All modelling results (charts and modelling description) for different scenarios and different income data are present in the next section (Charts and Modelling Description).

It is also important to pay attention to the following points.

- If the investor bought tokens at the initial price and the listing price of the token is determined by ten times greater, then the investor may want to return his investment with a minimum profit and it is possible to dump more tokens than planned in the model. Checking on the model showed that this is not critical, because. the unlocking system protects enough from the outflow of tokens and pressure on the price.

CHARTS AND MODELLING DESCRIPTION

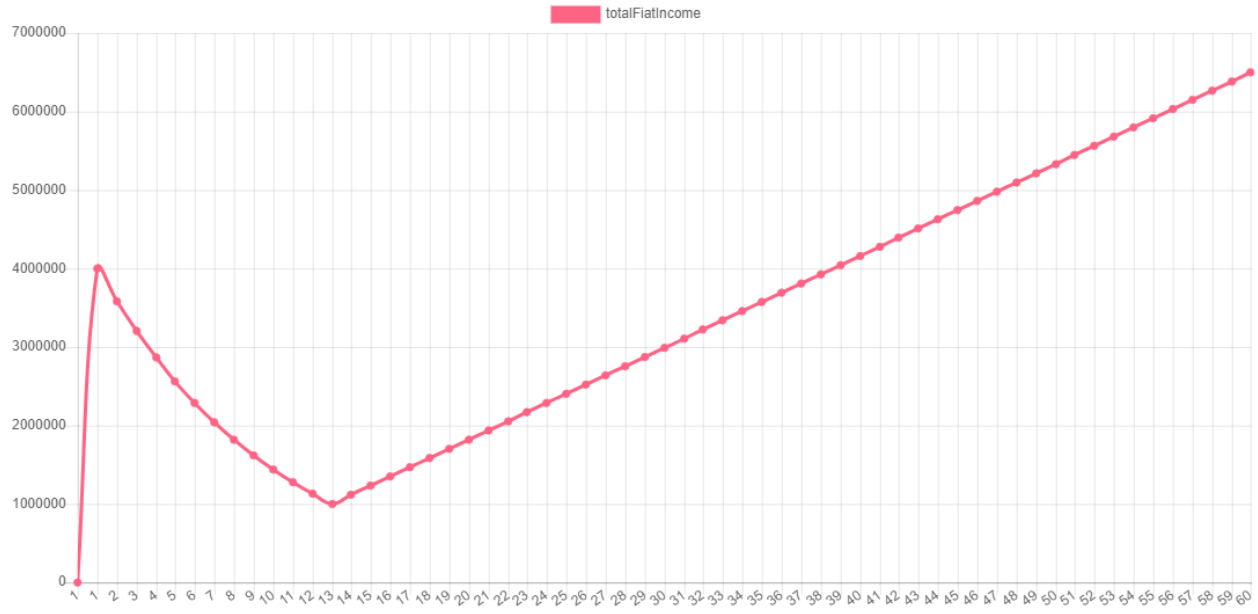
Experiment 1.

It is assumed that **the motivation for selling tokens is 69%.** 1% will be burned. The remaining 30% is distributed as follows:

- 15% - farming,
- 9% - staking,
- 5% - holding in wallets,
- 1% - use for games.

1.1. Not auspicious generated income data

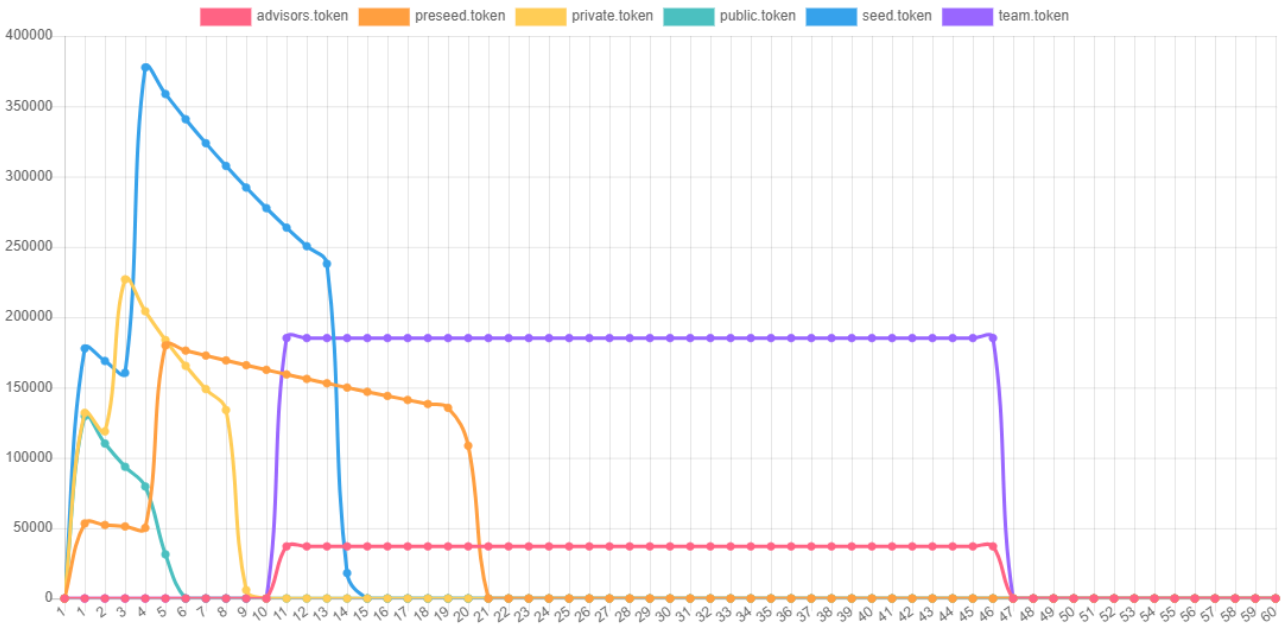
The diagram below presents the not auspicious generated *income data*[1]. The diagram shows data for the 60 months.



Initial sales data from 8F activated the safe system and related activity on the gaming service. For the first experiment, we consider the low activity in the gaming service and the low initial activities in staking and farming.

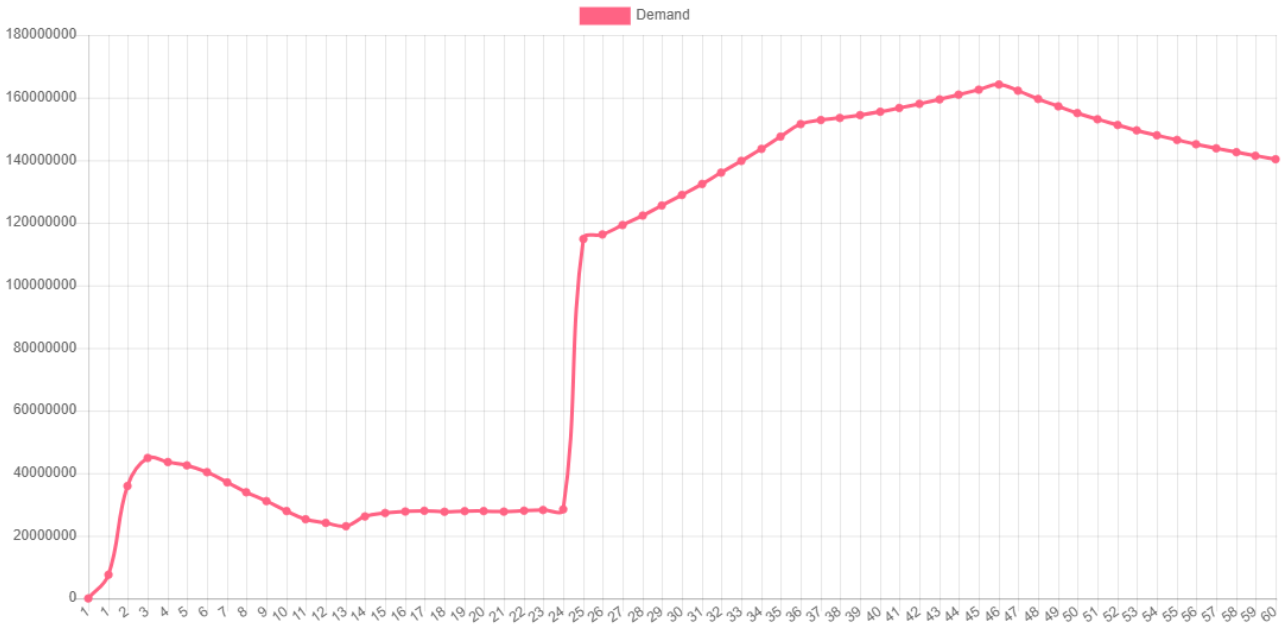
The curves of the tokens number for each stakeholder's group (with back sales motivation) are shown in the following graph.

[1] As *income data*, we mean the volume of fiat received for the 8F on the market in USD for staking, farming, burning, etc.



For this experiment, we get the following model simulation results:

- Model for changing the aggregate demand for an 8F token (includes staking, farming, buying back tokens for burning, and commissions).



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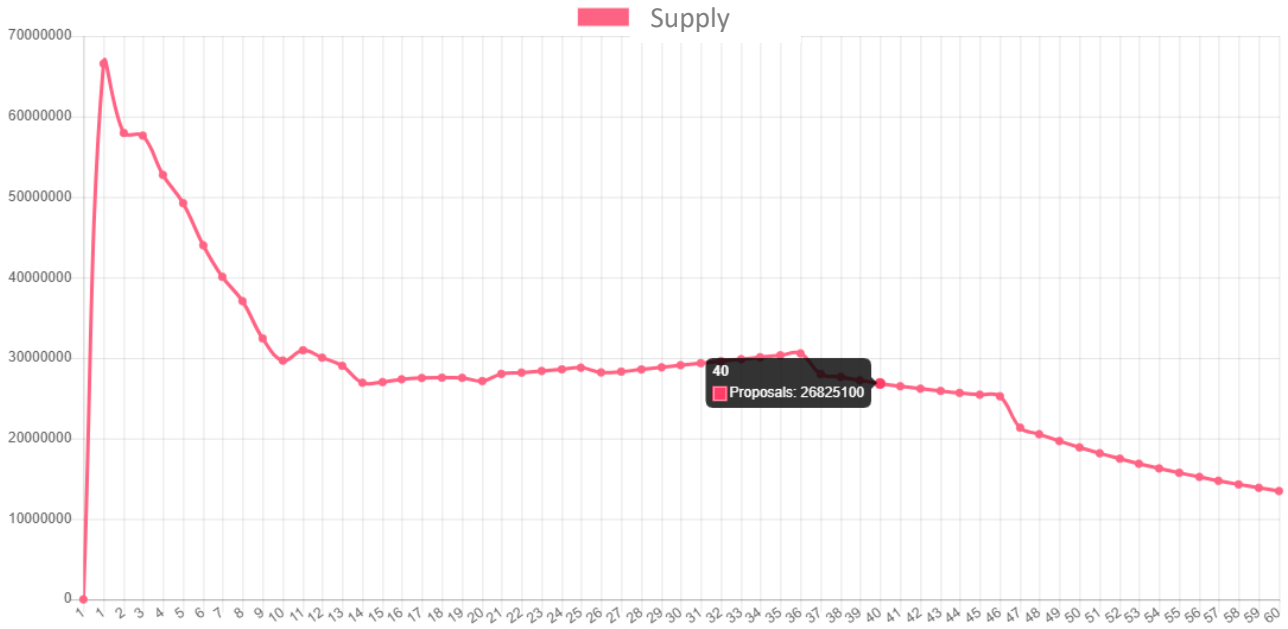
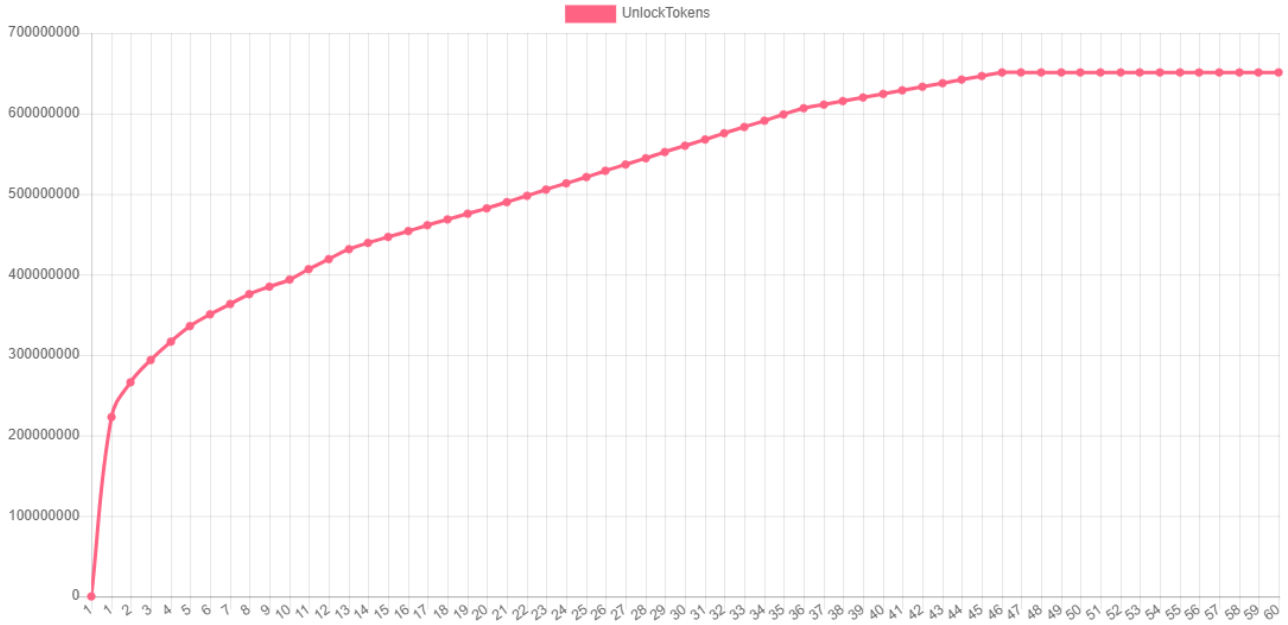
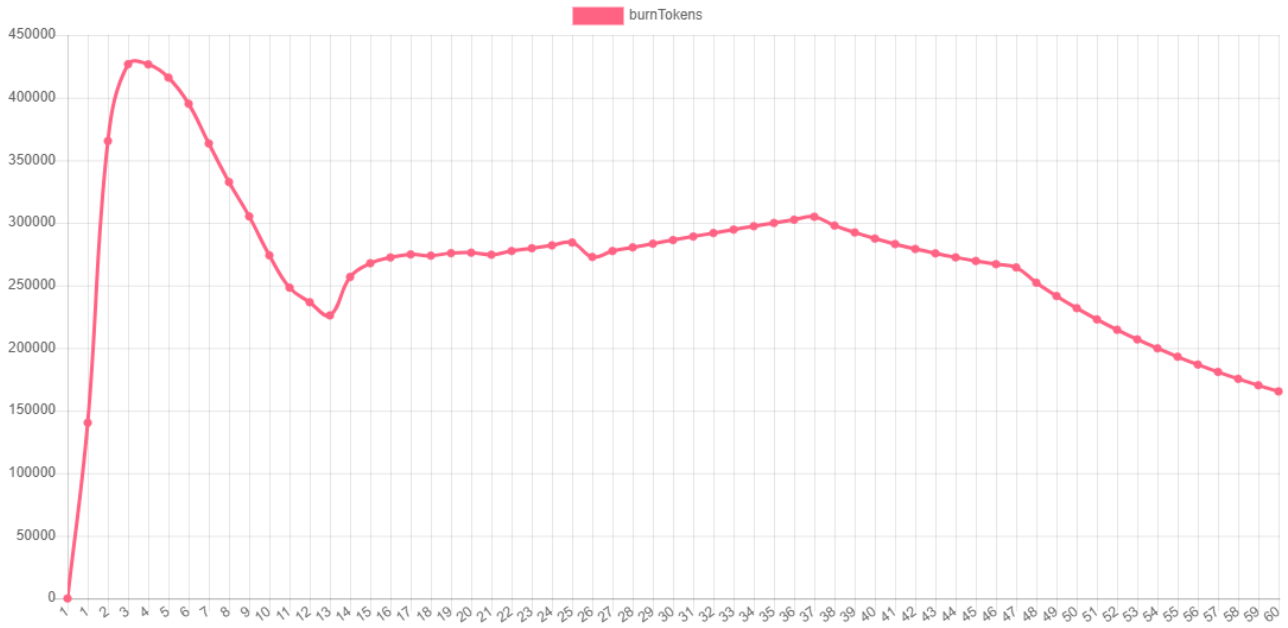
- Model for changing the aggregate supply for an 8F token.



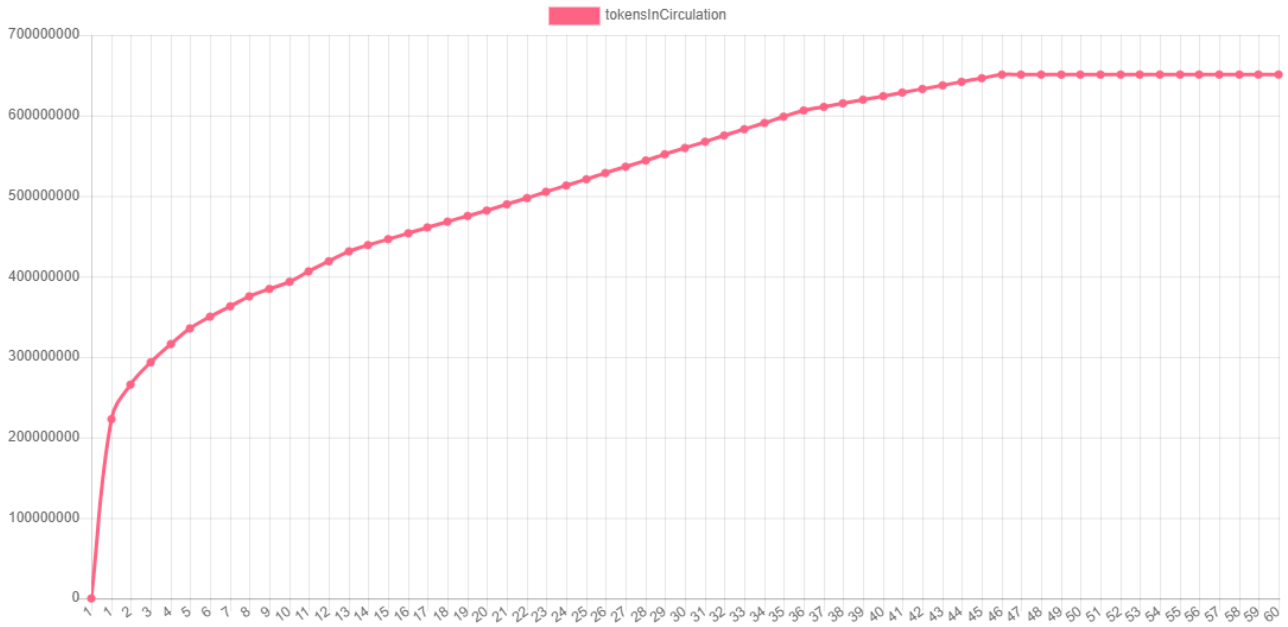
- Dynamics of volumes of released tokens (all tokens after unlocking).



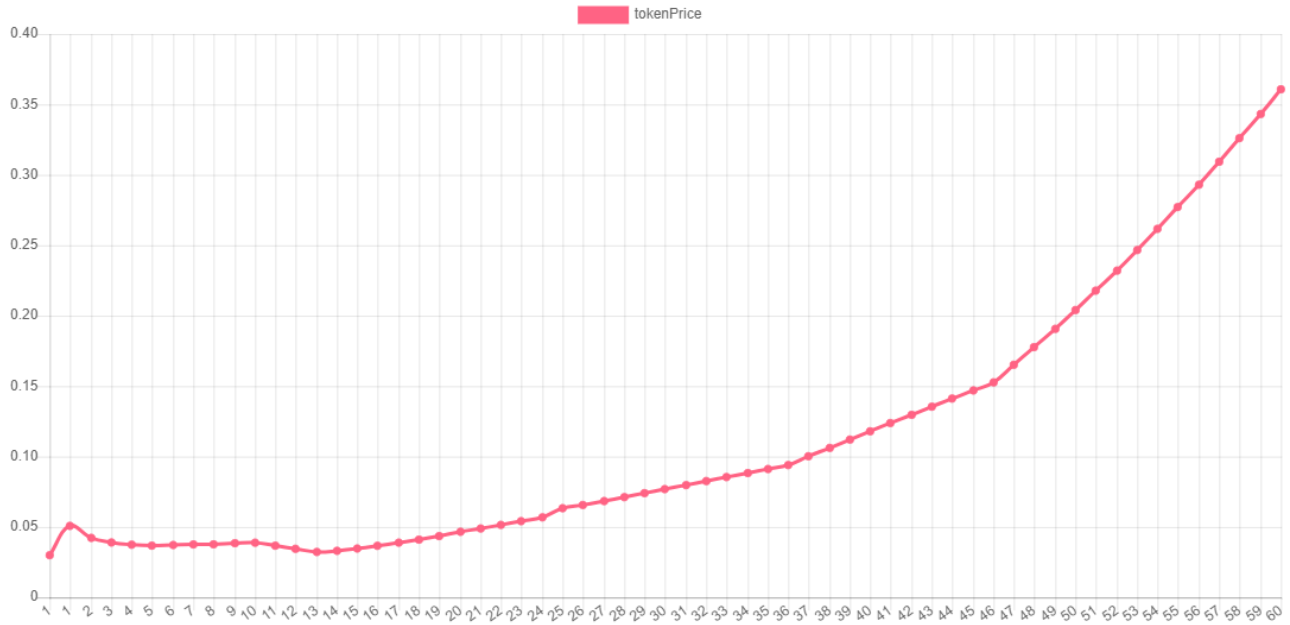
- Dynamics of the tokens burning volumes.



- Remaining tokens in circulation.



- Token price



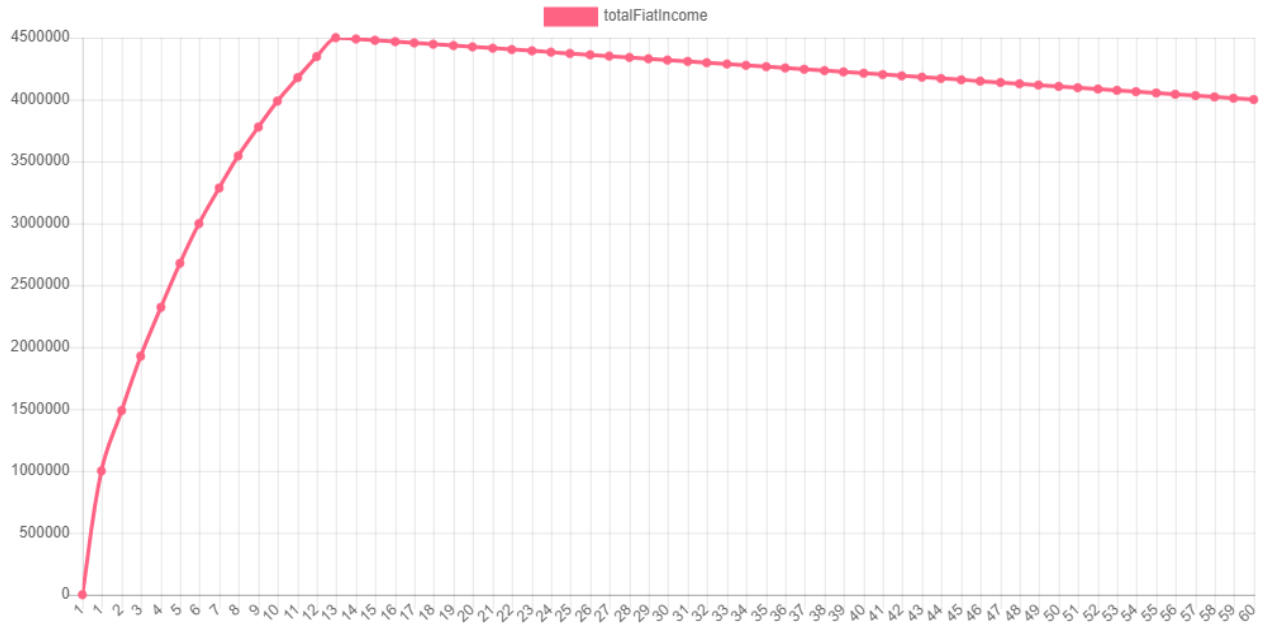
With low sales of 8F, we observe a drop in the price of the token that is increasing after 13 month.

The price of a token is determined as the ratio of the amount of fiat in the liquidity pool to the number of tokens:

$$\text{tokenPrice} = \text{LiquidityPoolFiat} / \text{LiquidityPoolToken}.$$

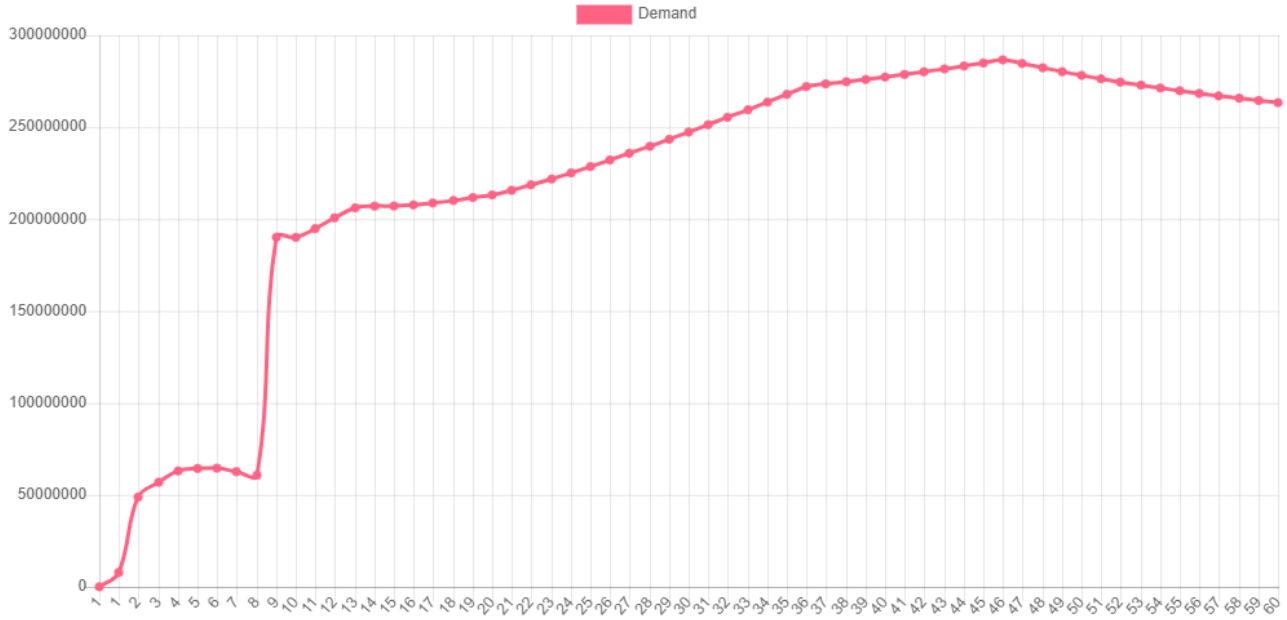
1.2. Auspicious generated data

For the experiment, the curve of total income in USD for purchasing of service was generated for 60 months. It's present on the chart below.

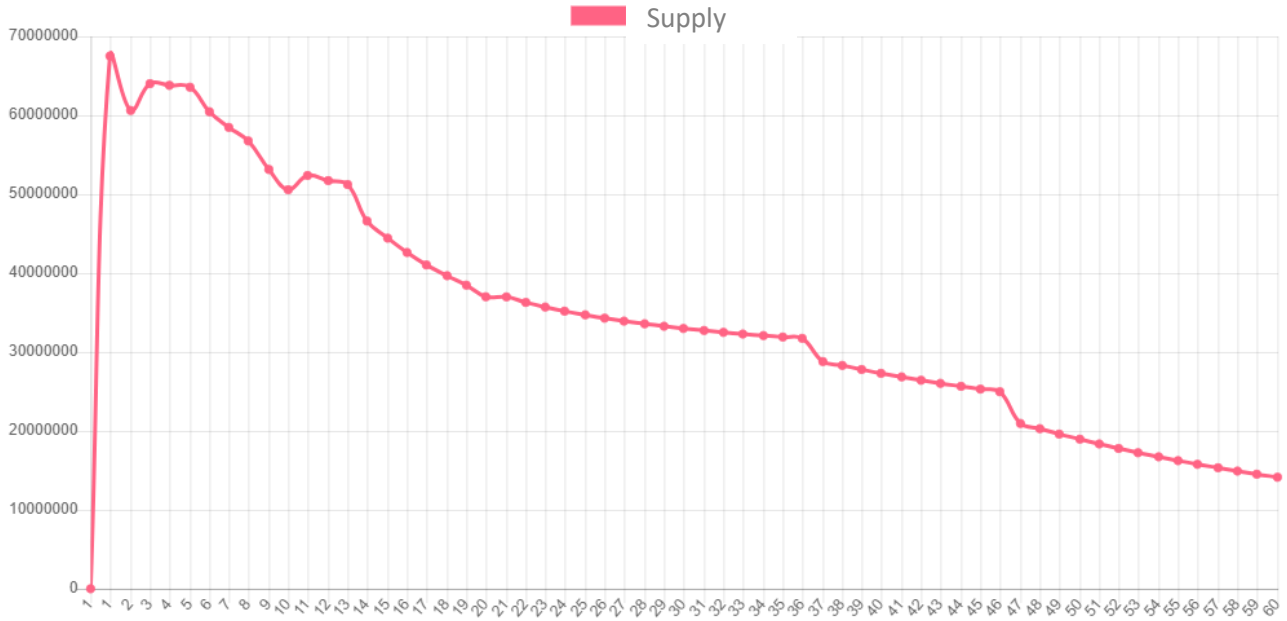


For this experiment, we get the following model simulation results:

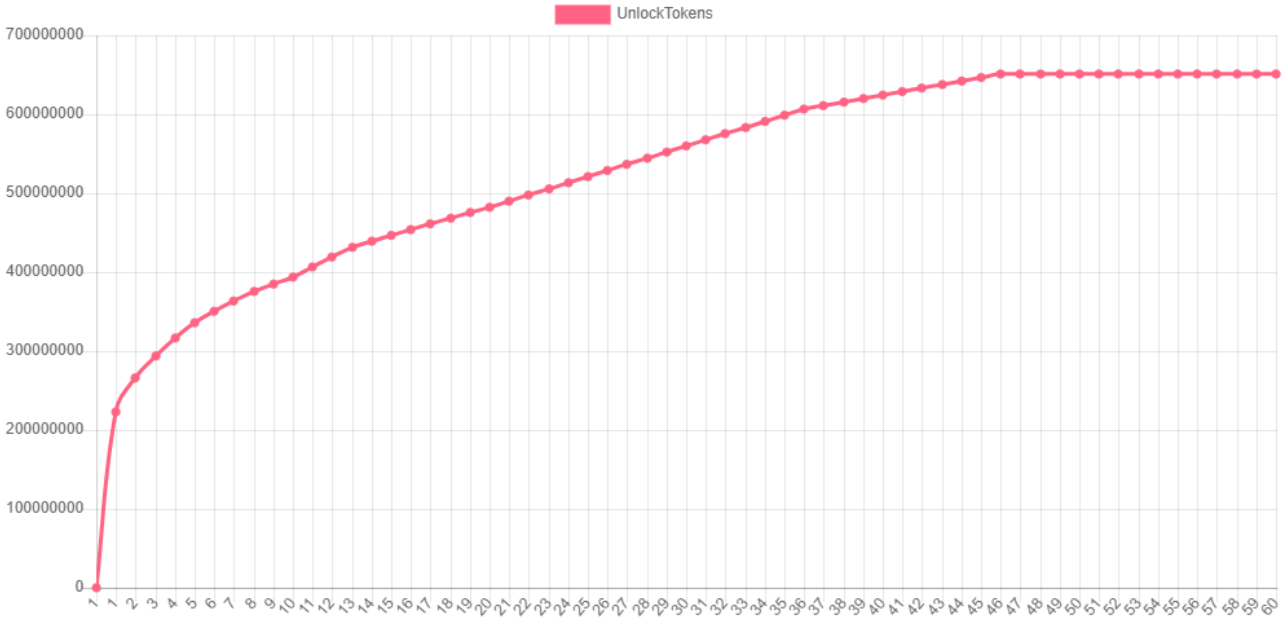
- Model for changing the aggregate demand for an 8F token (includes staking, farming, buying back tokens for burning, and commissions).



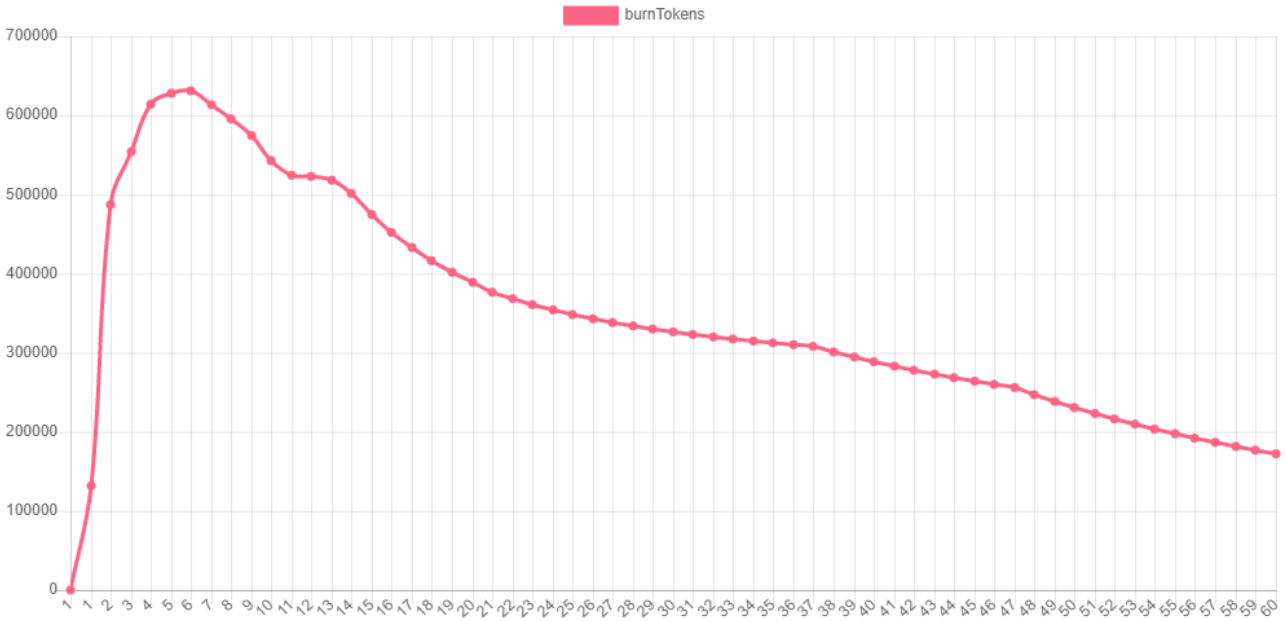
- Model for changing the aggregate supply for an 8F token.



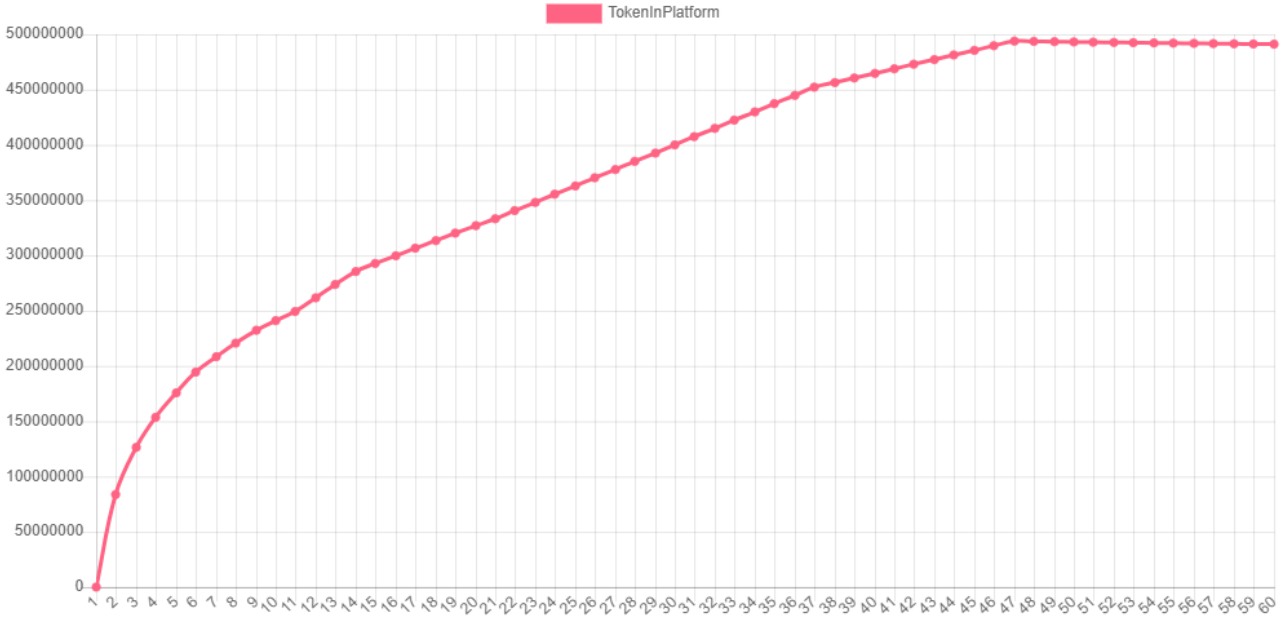
- Dynamics of volumes of released tokens (all tokens after unlocking).



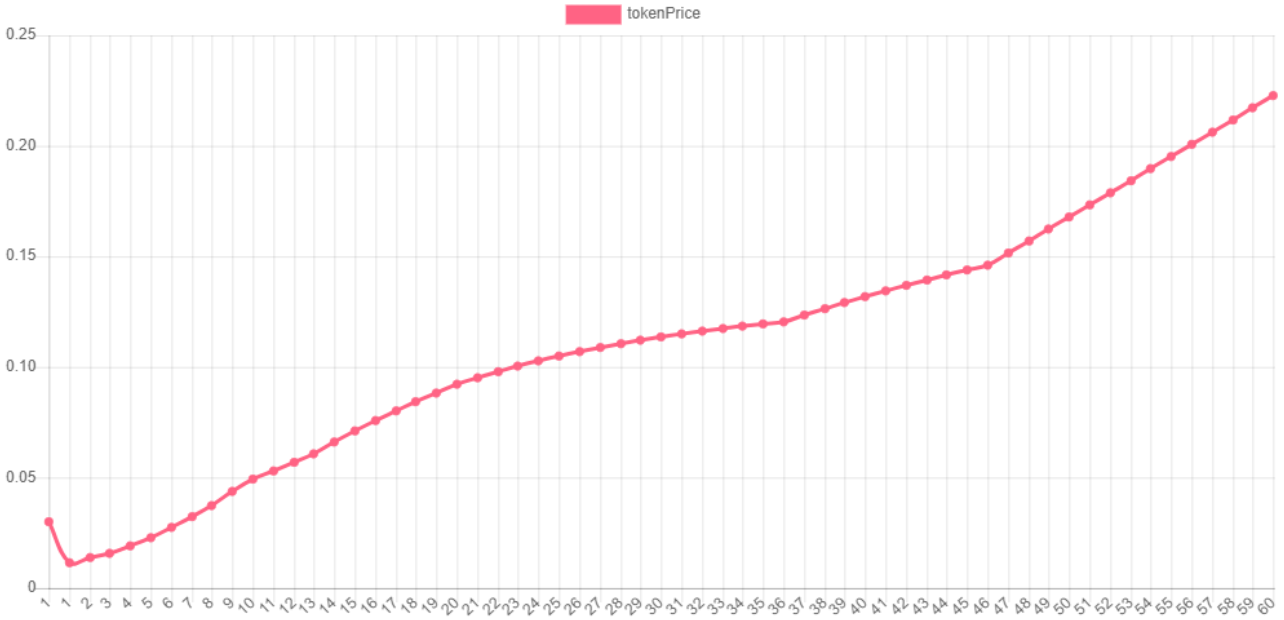
- Dynamics of the tokens burning volumes.



- Remaining tokens in circulation.



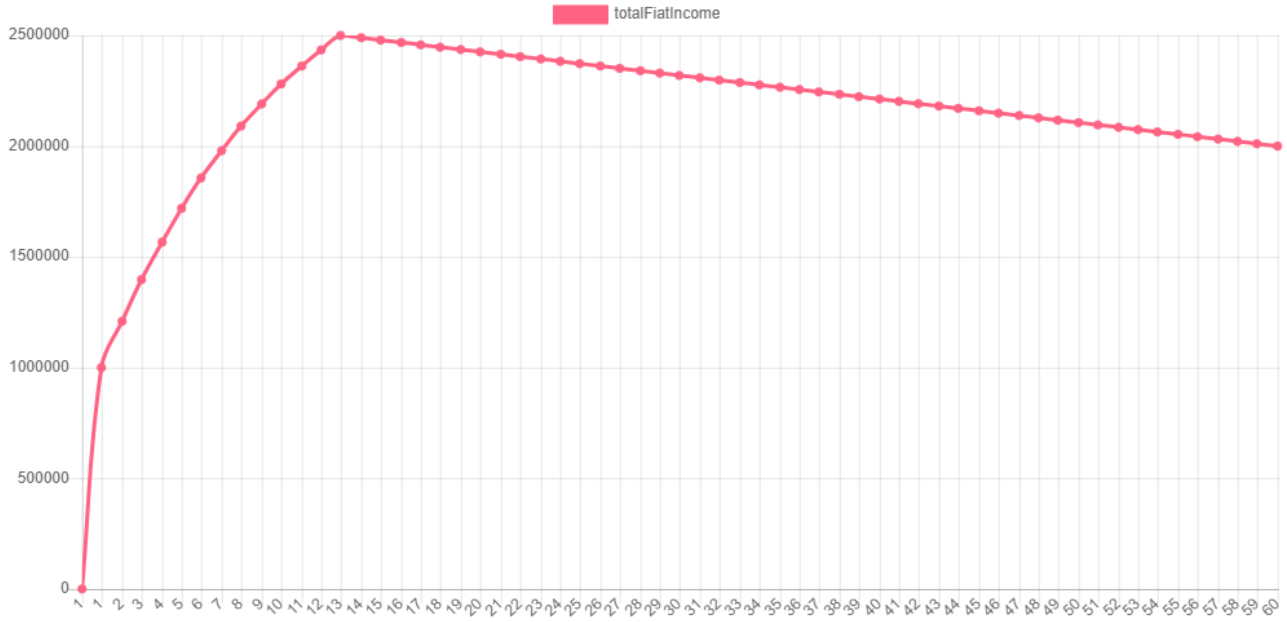
- Token price



1.3. Minimal auspicious generated income data

The minimal income data that were admissible for the project were generated and launched with the model. Usage of algebraic technologies allows computing the initial parameters of Tokenomics income to obtain at least a 2-times increase of price as the criterion of project success.

The income chart is presented below.



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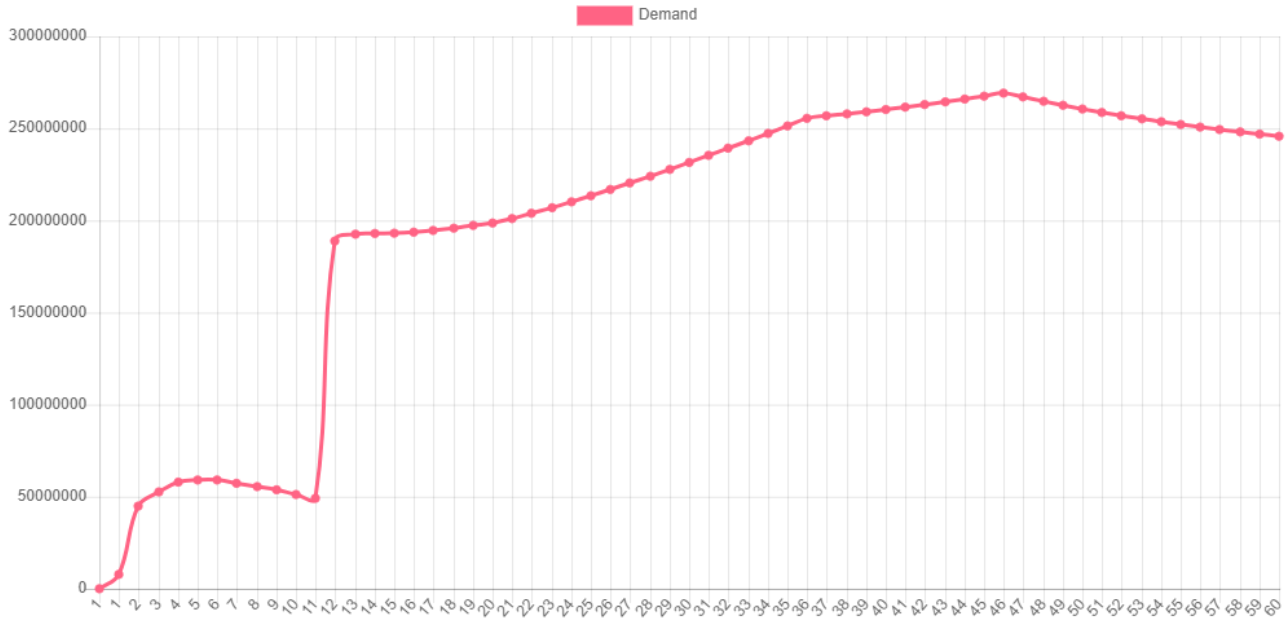
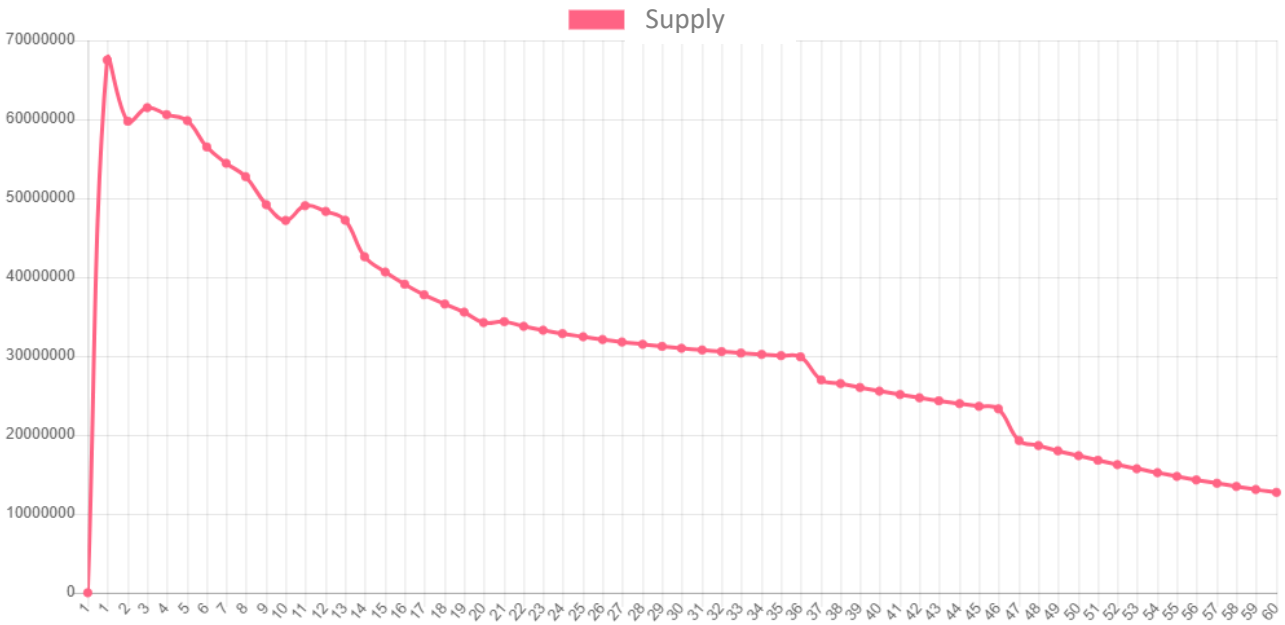
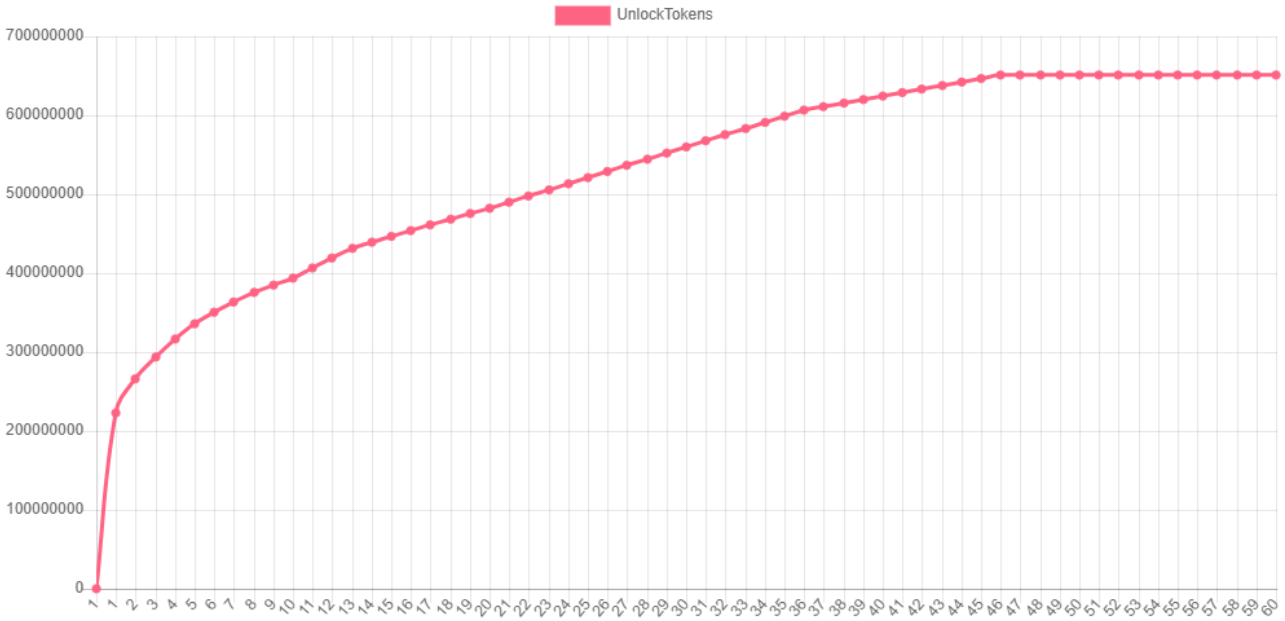


- Model for changing the aggregate supply for an 8F token.



- Dynamics of volumes of released tokens (all tokens after unlocking).



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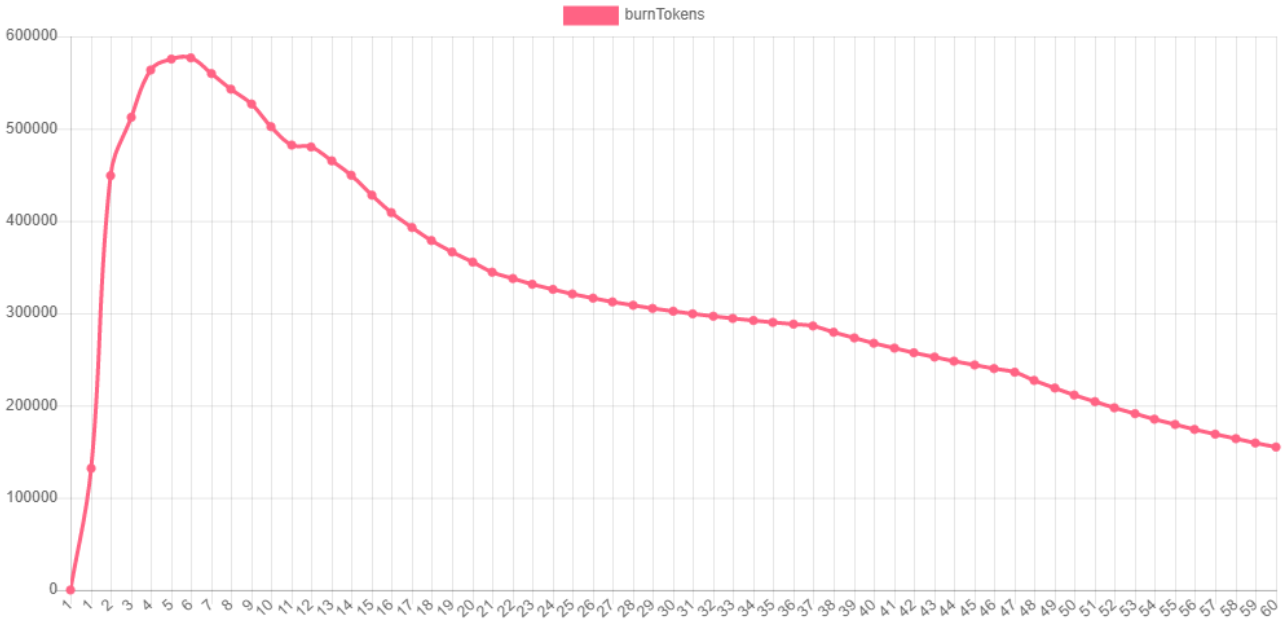
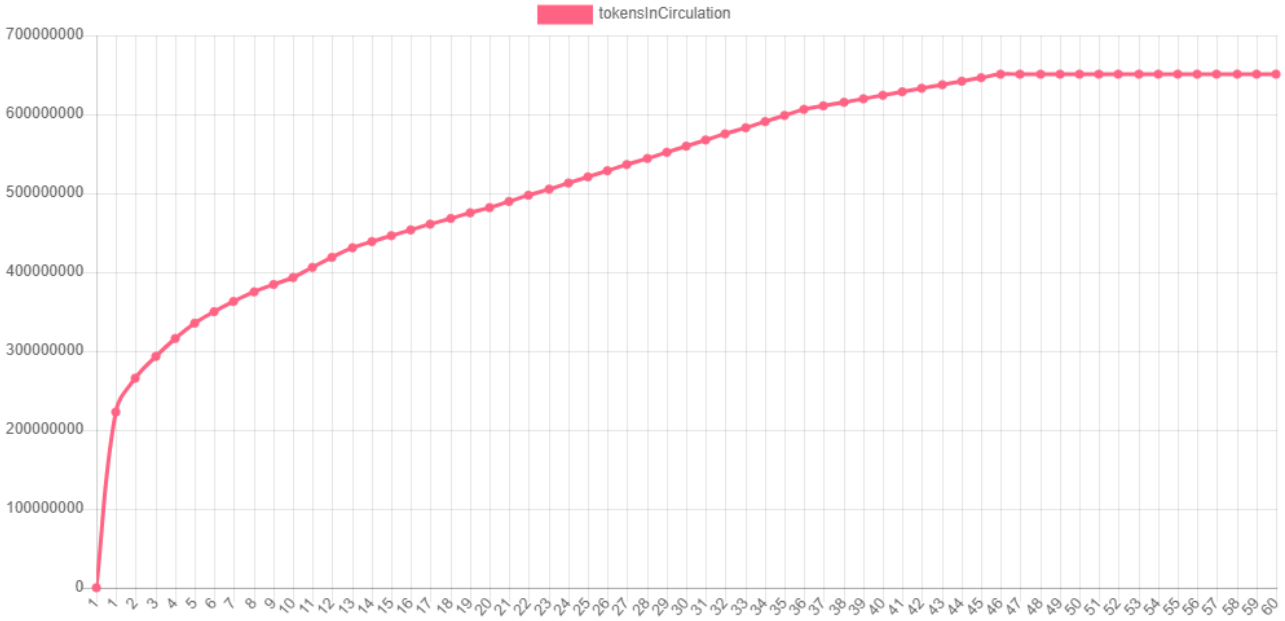
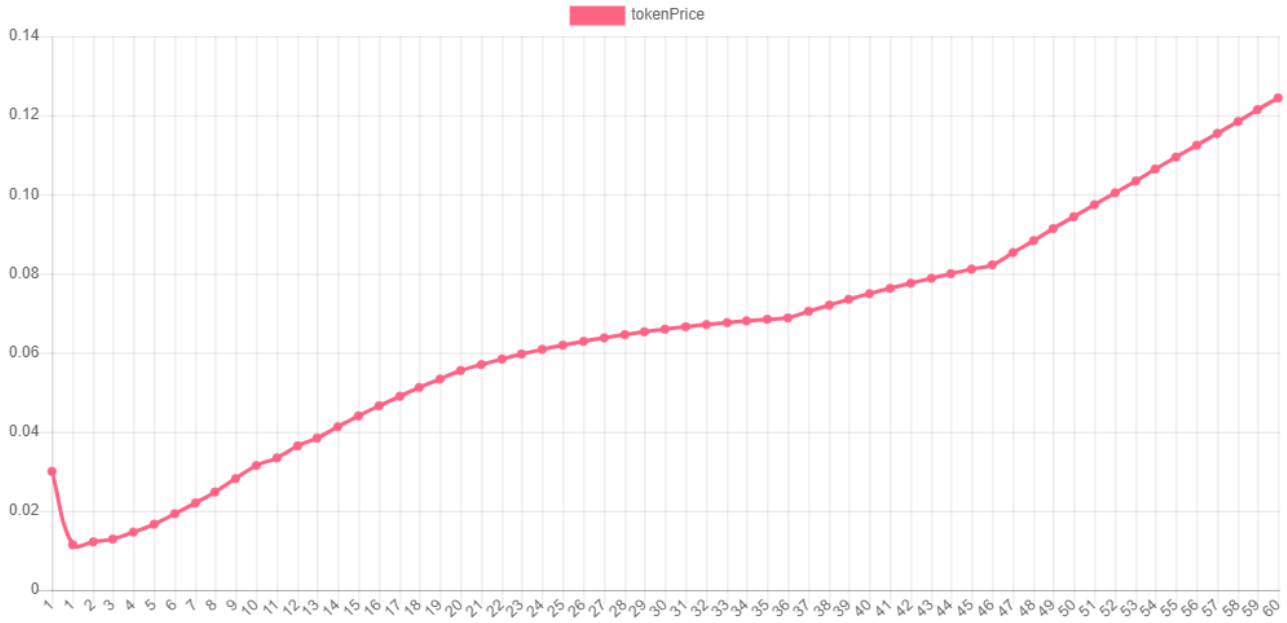
- Dynamics of the tokens burning volumes.



- Remaining tokens in circulation.



- Token price

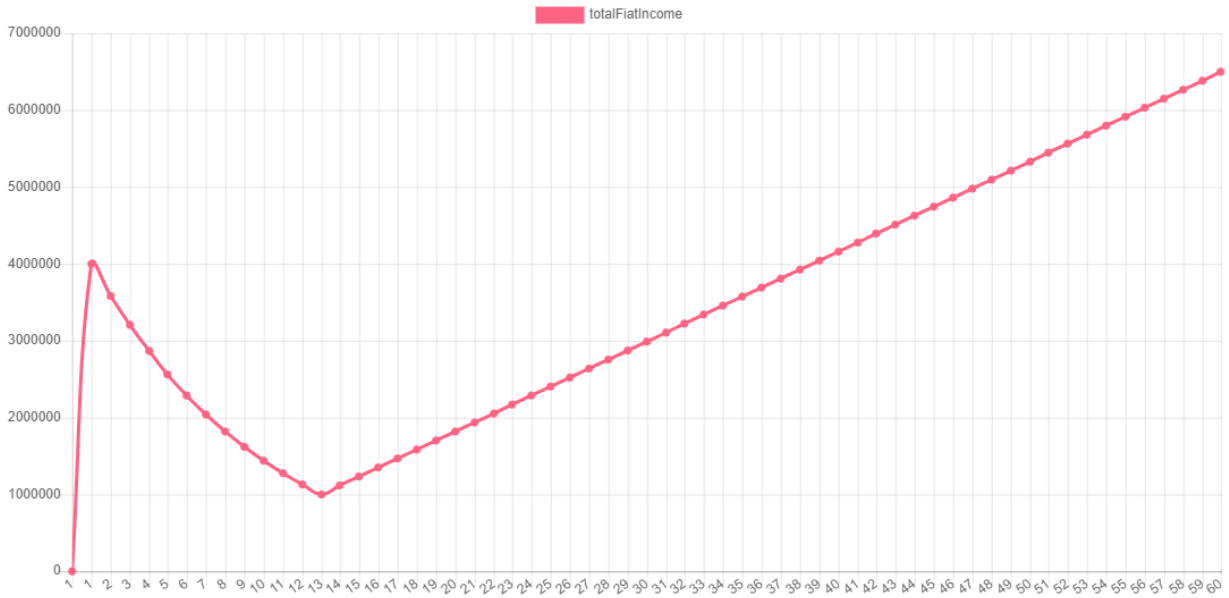


Experiment 2.

It is assumed that **the motivation for selling tokens is 44%.** 1% will be burned. The remaining 55% is distributed as follows:

- 22% - farming,
- 15% - staking,
- 6% - holding in wallets,
- 12% - use for games.

2.1. Not auspicious generated income data



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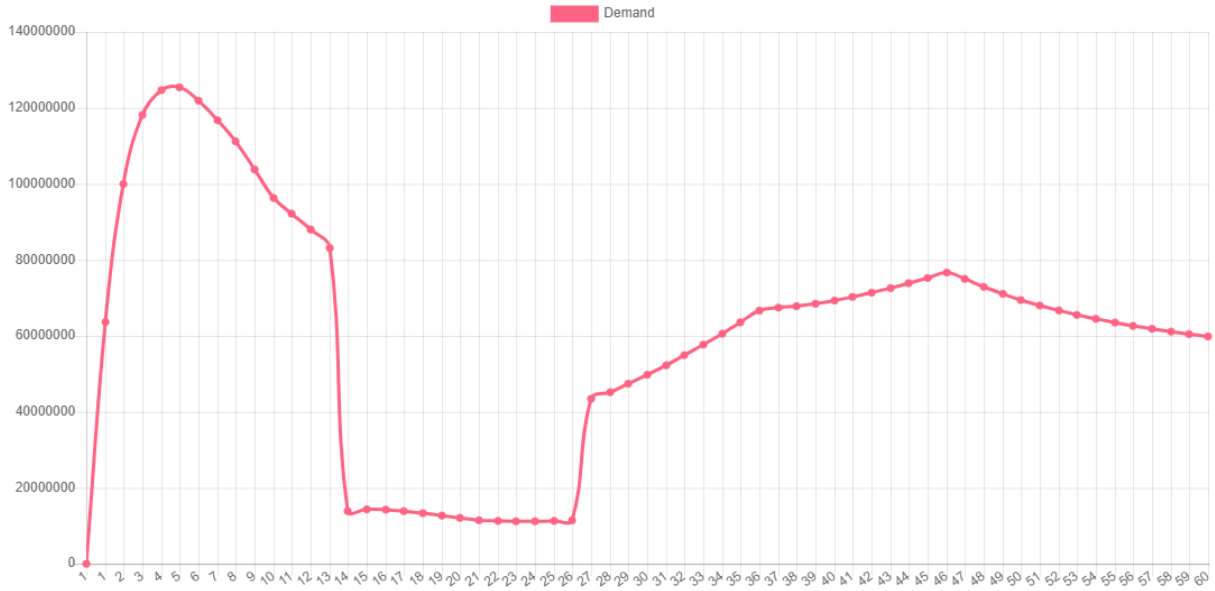
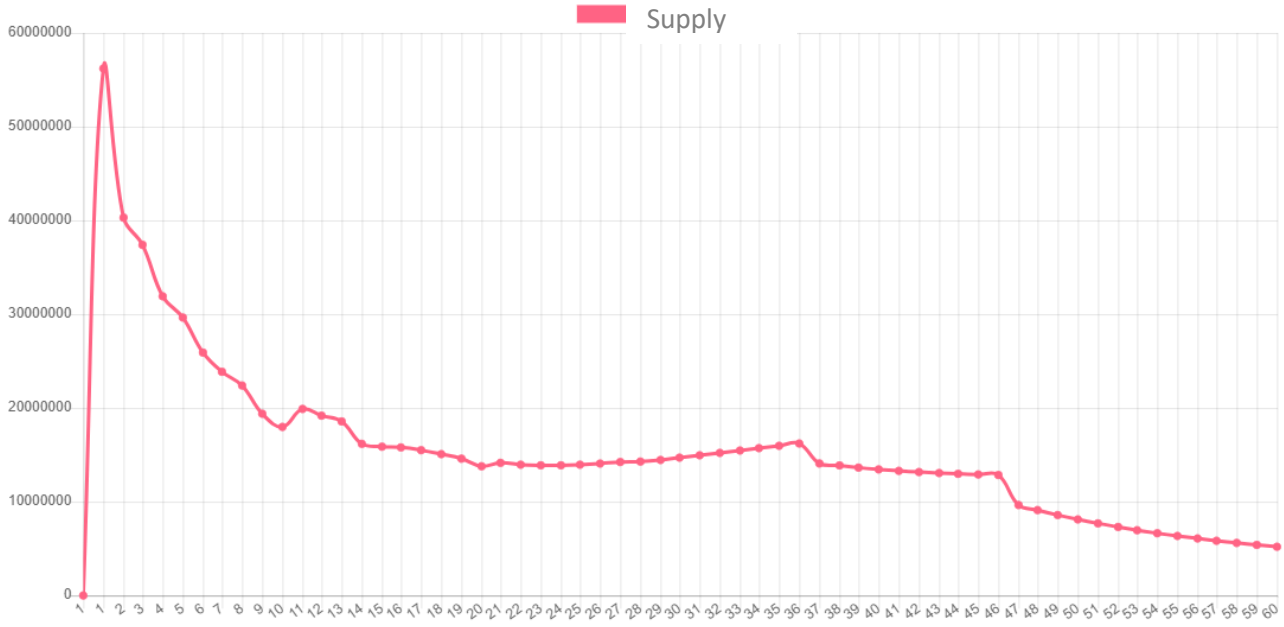
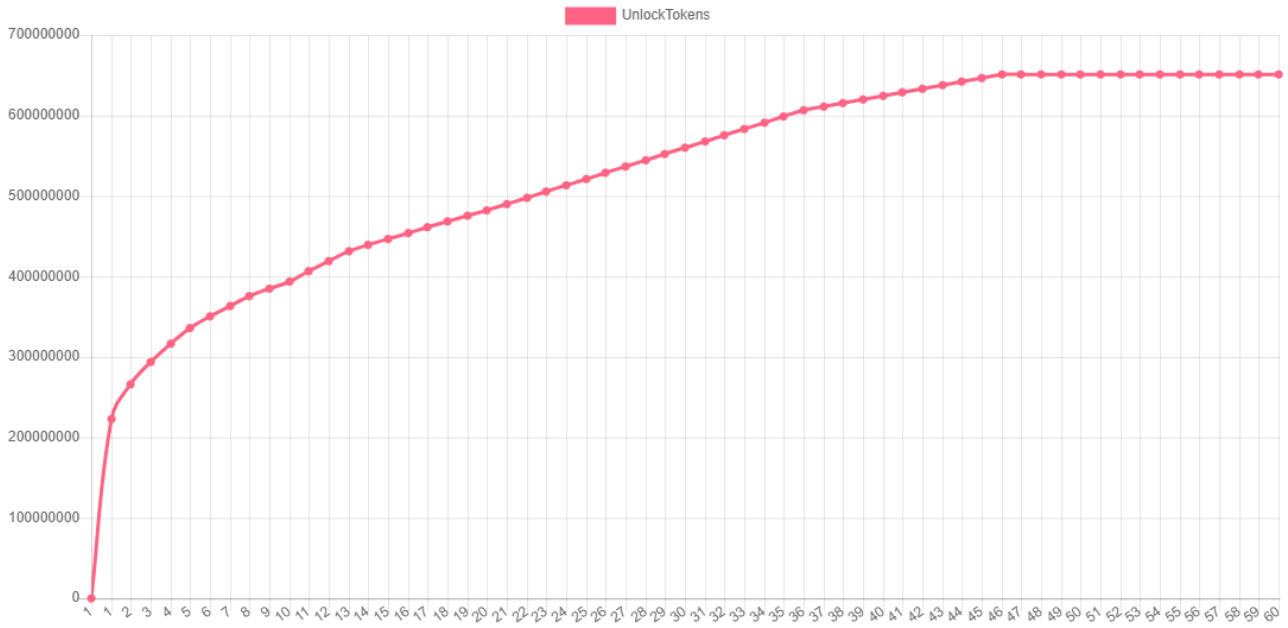


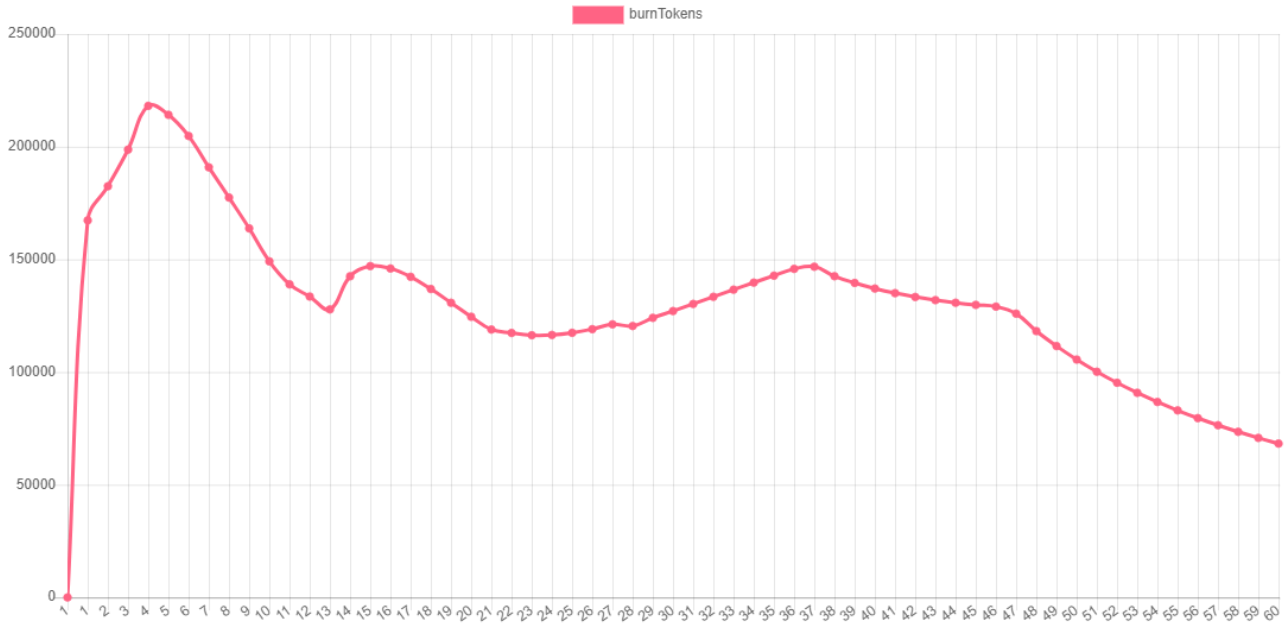
- Model for changing the aggregate supply for an 8F token.



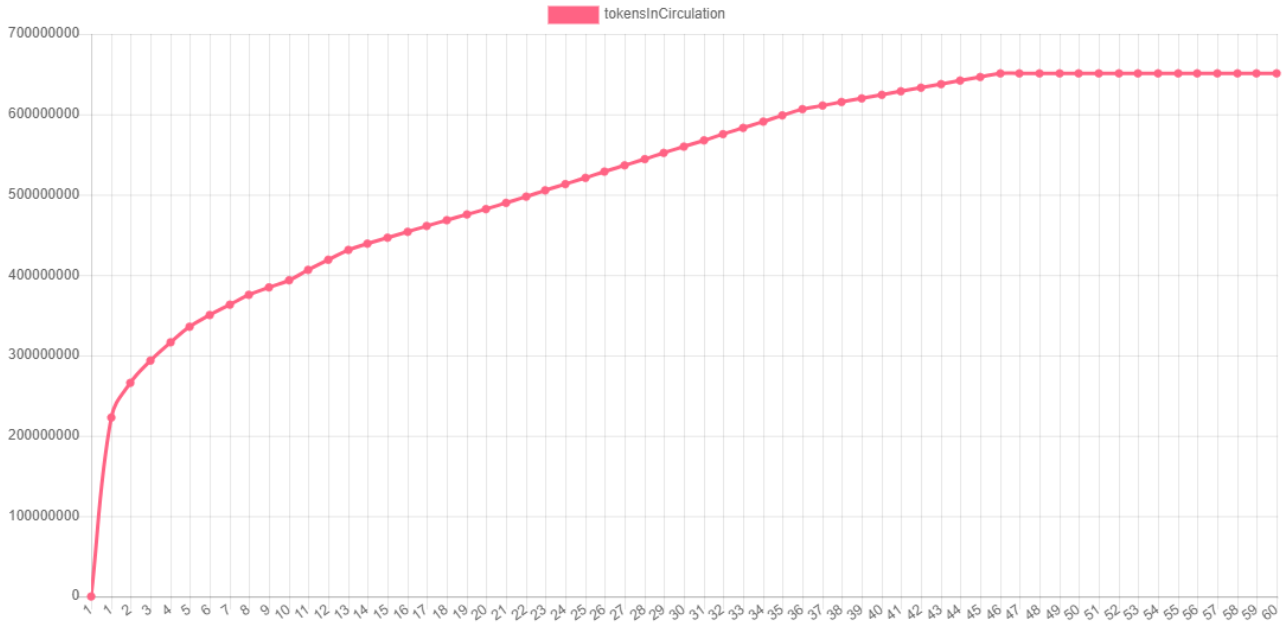
- Dynamics of volumes of released tokens (all tokens after unlocking).



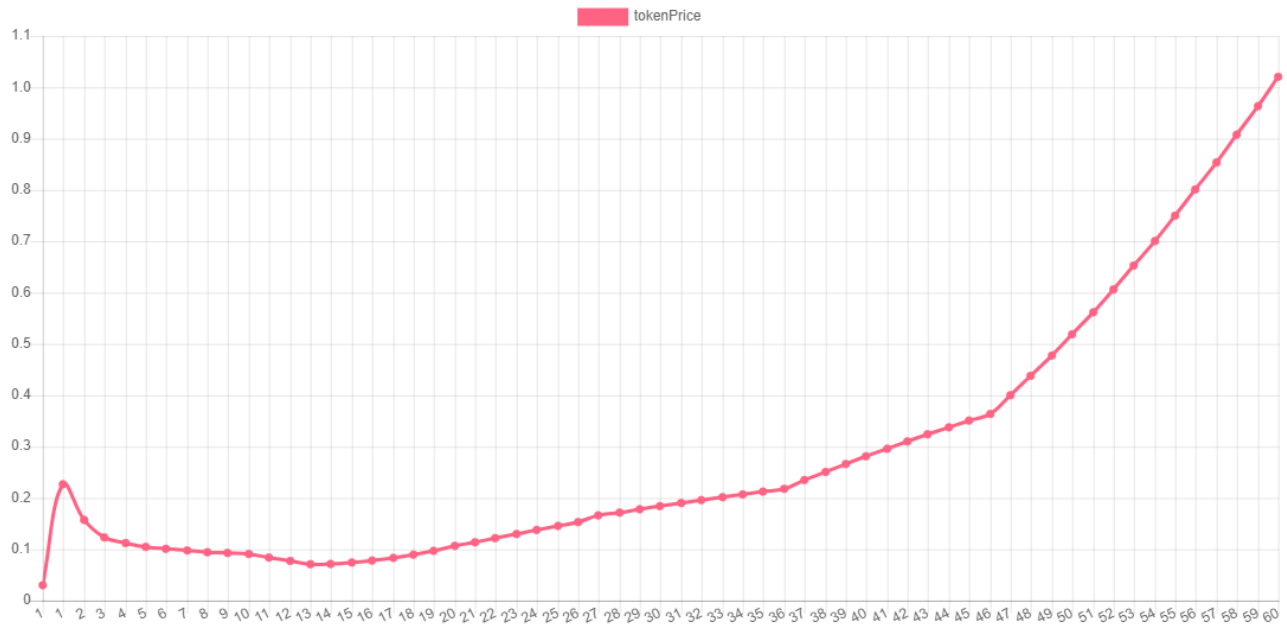
- Dynamics of the tokens burning volumes.



- Remaining tokens in circulation.

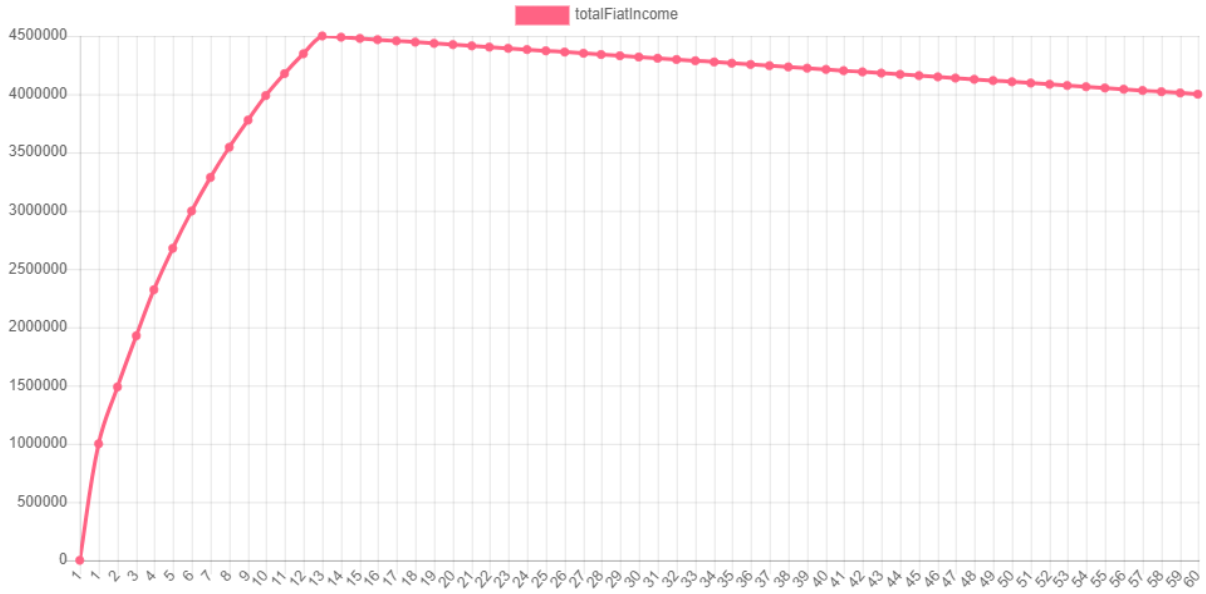


- Token price



With low sales of 8F, we observe a drop in the price of the token that is increasing after 14 month.

2.2. Auspicious generated data



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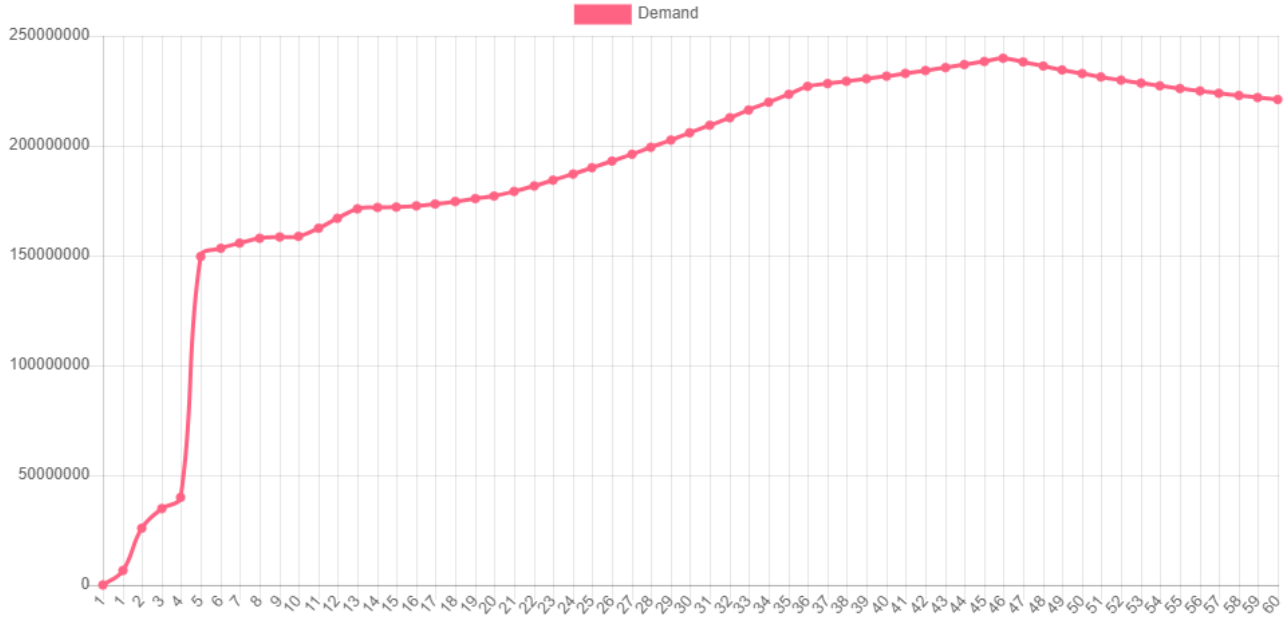

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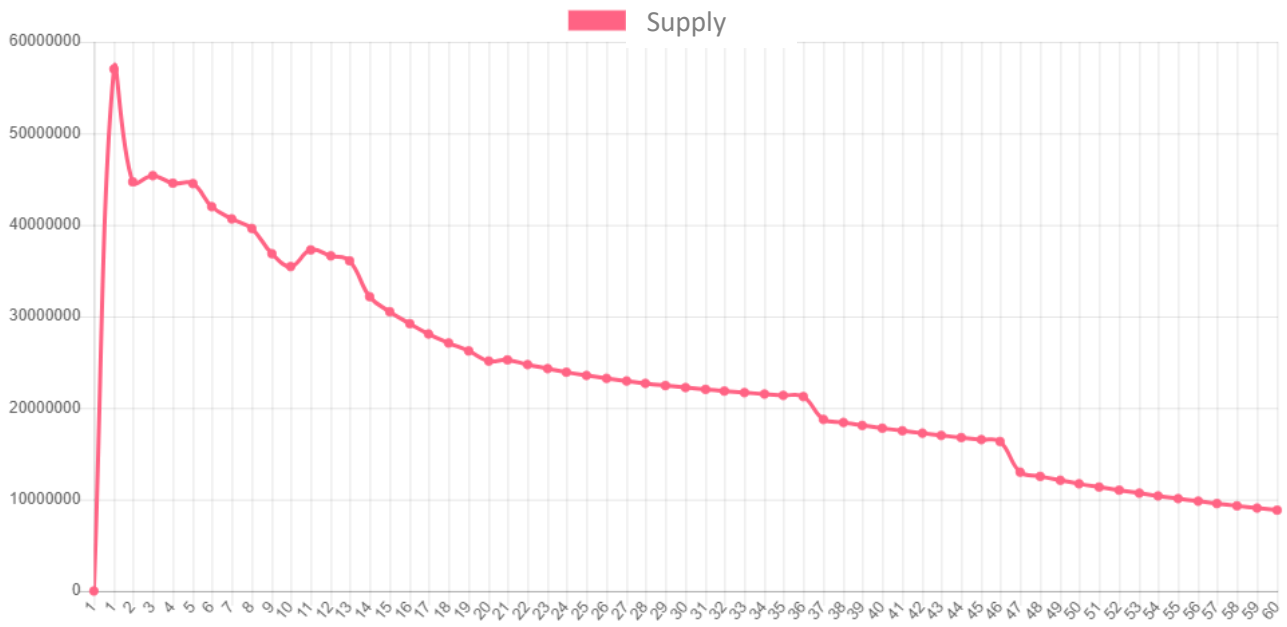
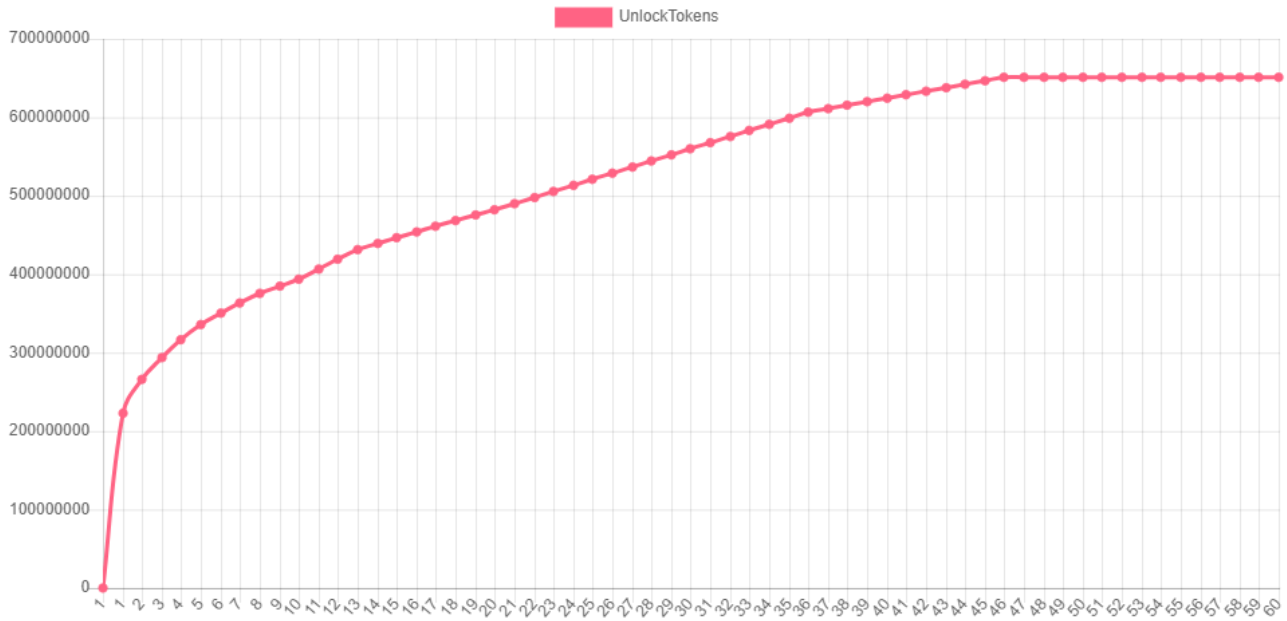
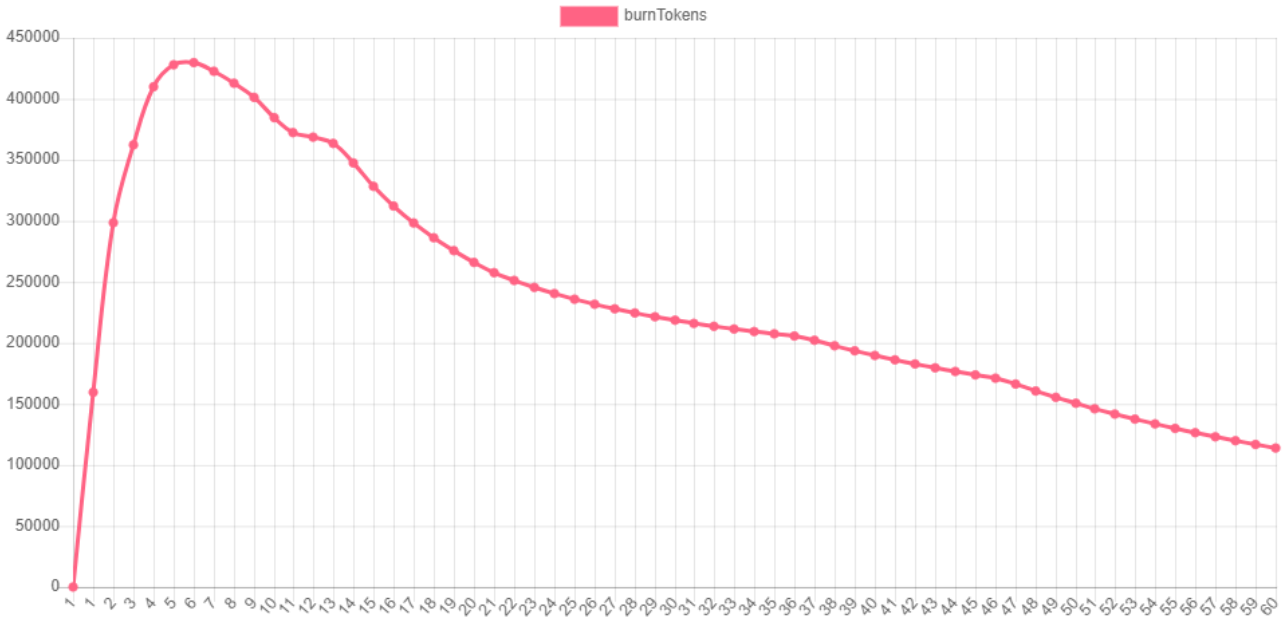
- Model for changing the aggregate supply for an 8F token.



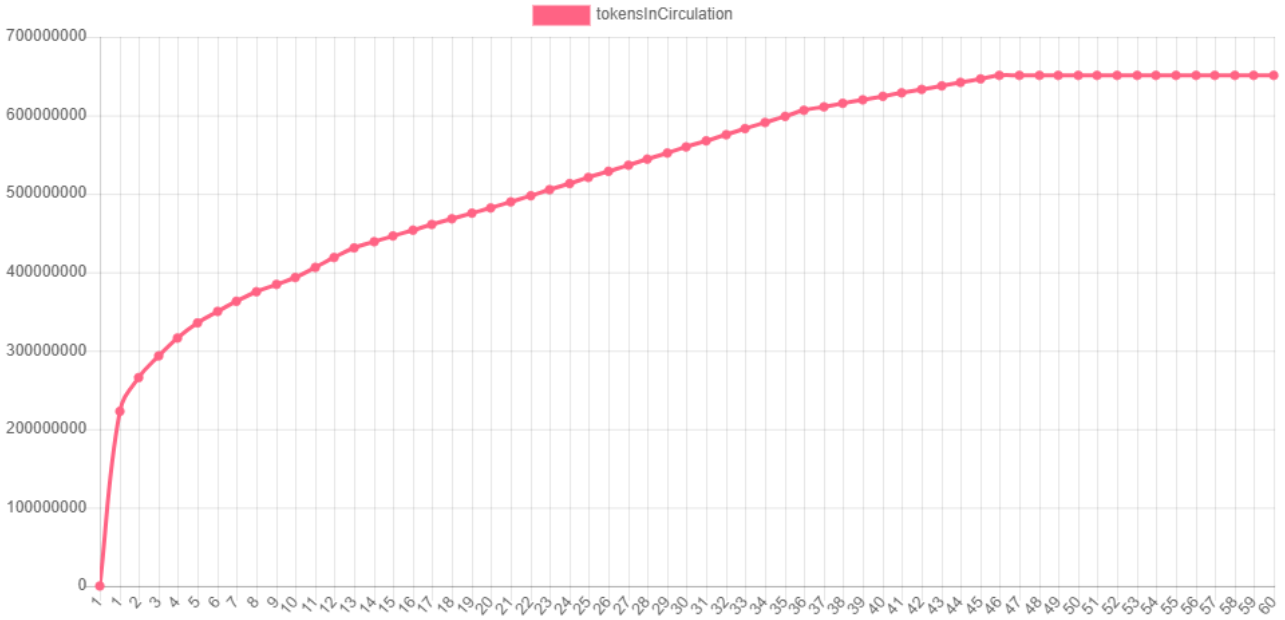
- Dynamics of volumes of released tokens (all tokens after unlocking).



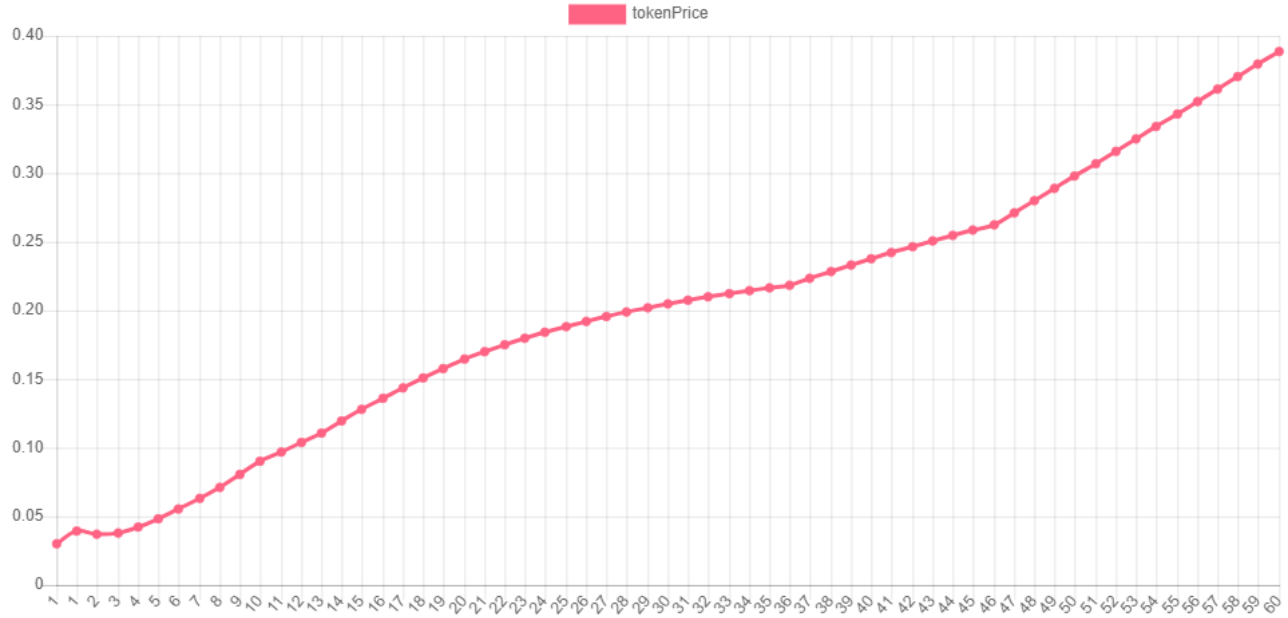
- Dynamics of the tokens burning volumes.



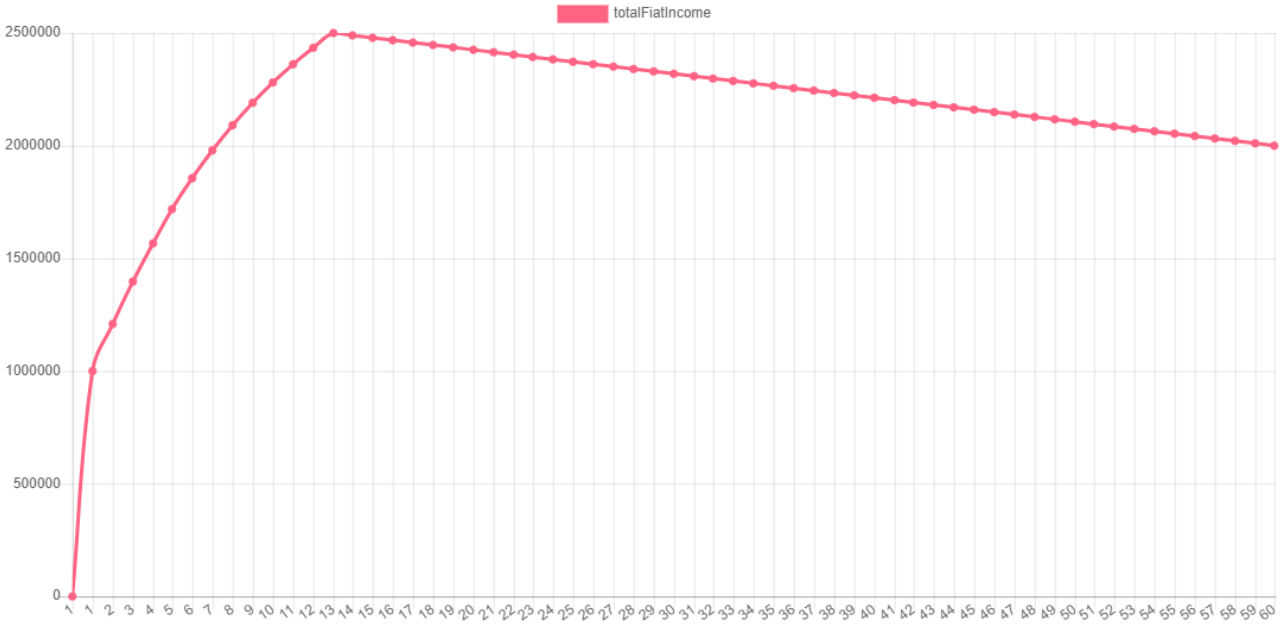
- Remaining tokens in circulation.



- Token price



2.3. Minimal auspicious generated income data



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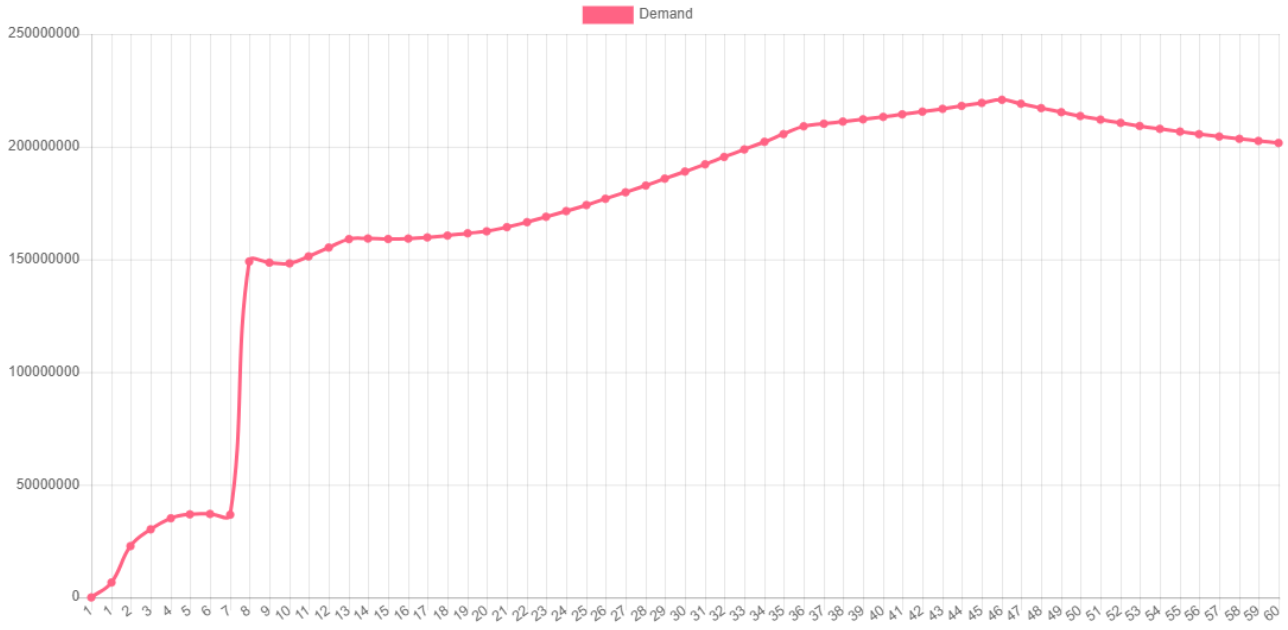
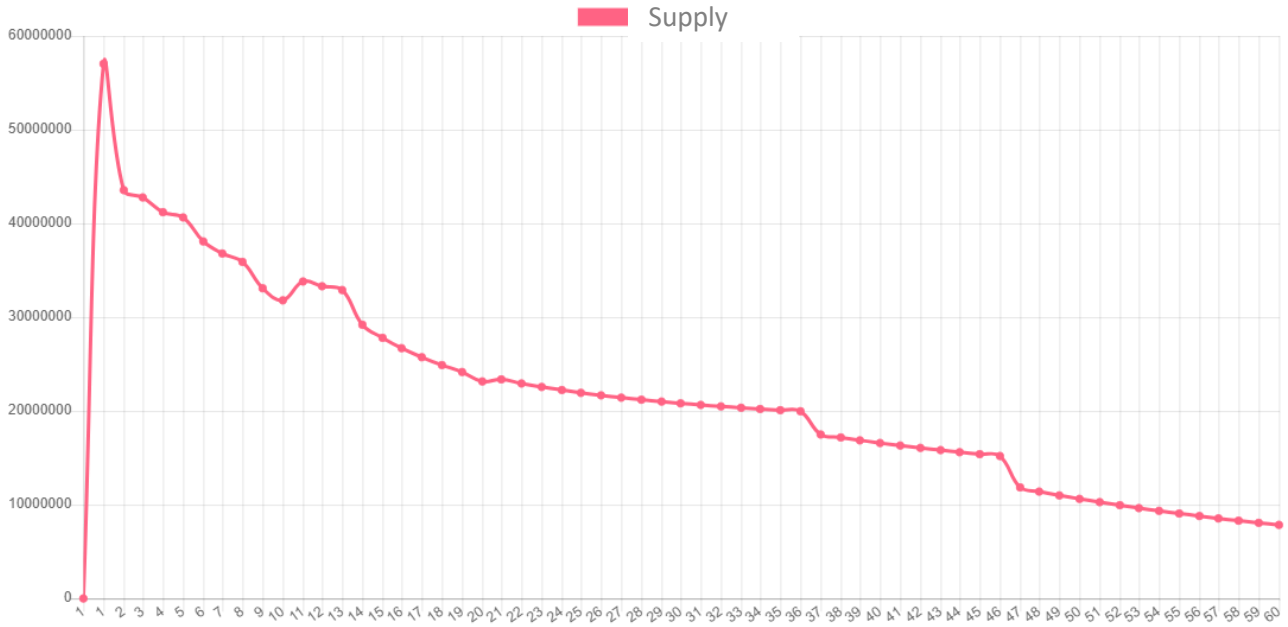
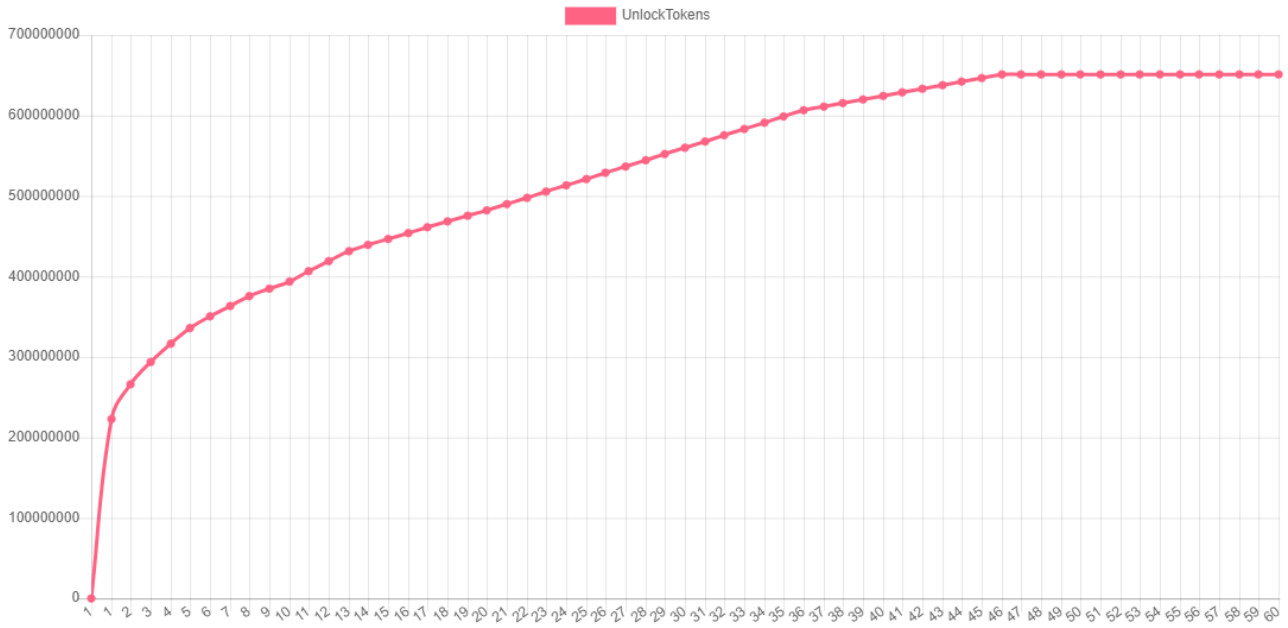


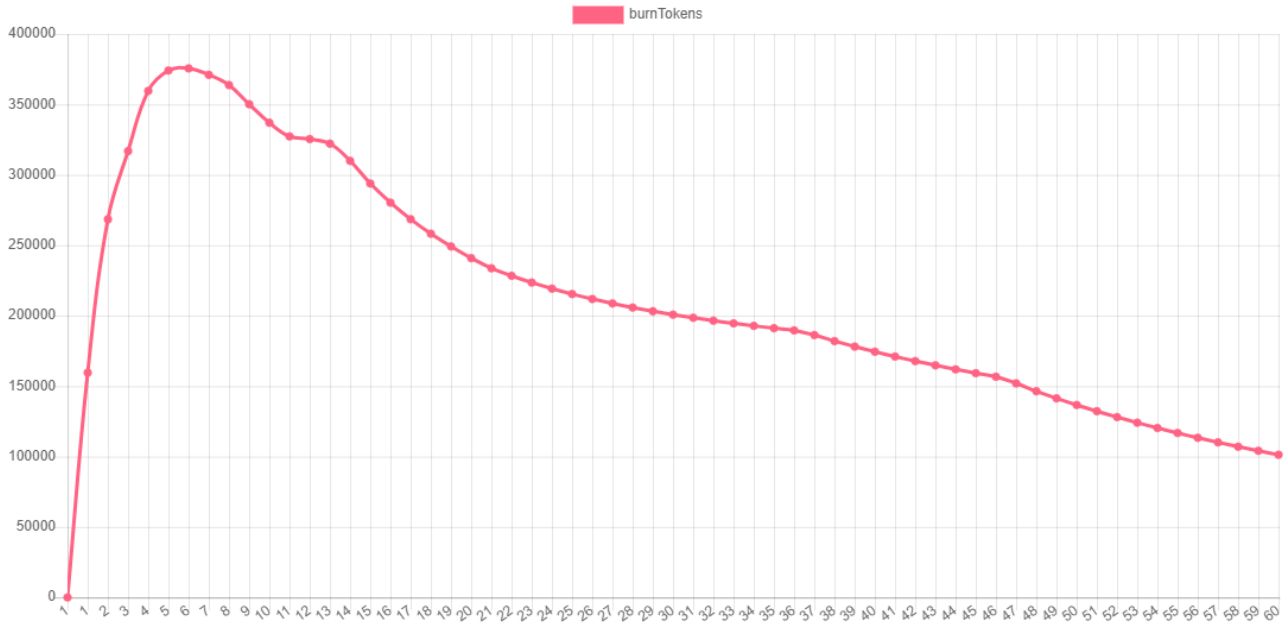
- Model for changing the aggregate supply for an 8F token.



- Dynamics of volumes of released tokens (all tokens after unlocking).



- Dynamics of the tokens burning volumes.



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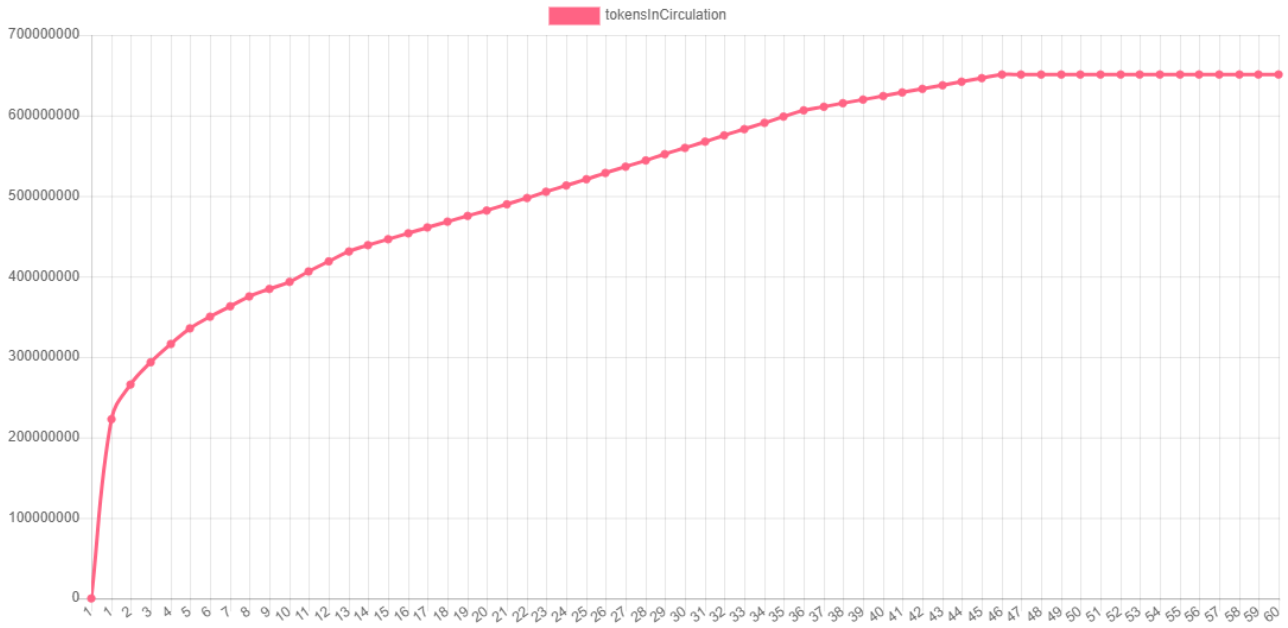
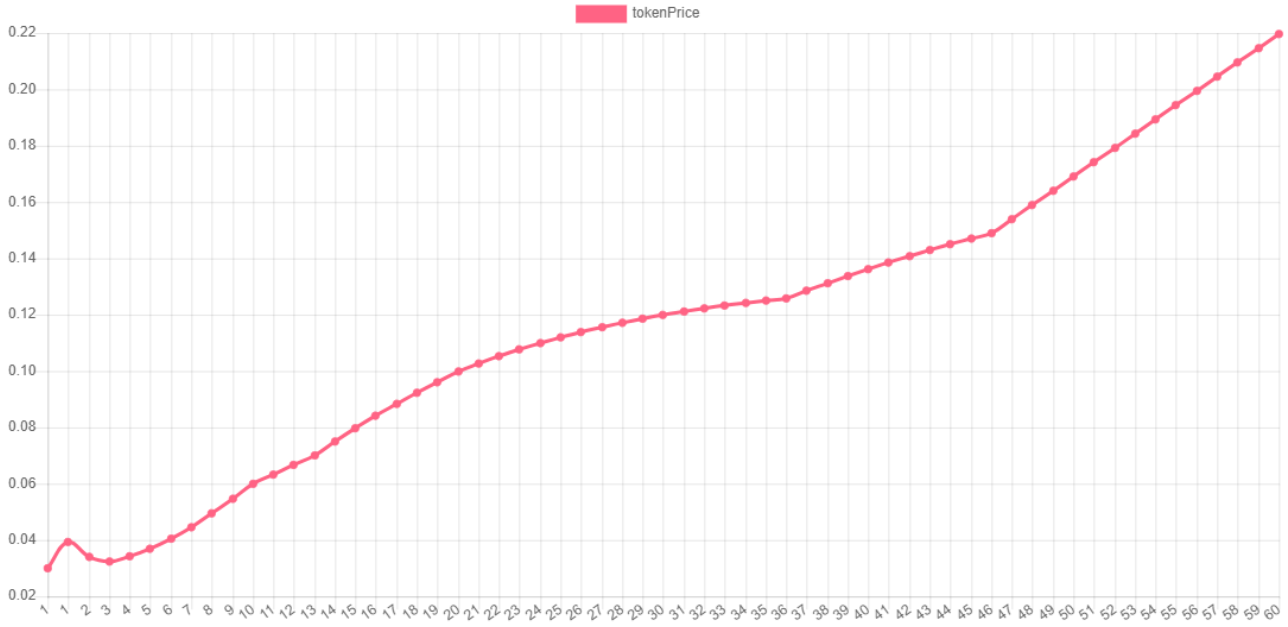
- Remaining tokens in circulation.



- Token price



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TABLES

TABLE 1. INITIAL VALUES OF THE PARAMETERS OF THE TOKEN ECONOMY

Total Number of Tokens		**888888888**	
Liquidity Pool	Fiat (USD)	200000	
	Tokens (8F)	6666667	
Initial Token Price		0.03	
Farming Sale Factor for Stakeholders		15%	22%
Hold Factor for Stakeholders		5%	6%
Stake Sale Factor for Stakeholders		9%	15%
Sale Factor for Stakeholders		69%	44%
Burning Tokens During Sale Operation		1%	
Game Sale Factor for Stakeholders		1%	12%

TABLE 2. INVESTMENT AND INITIAL DISTRIBUTION OF TOKENS

Token Holders	Cliff (months)	Vesting (months)	% of Total Supply	Price Per Token
Pre-Seed Round, for Lead	4	20	**6,00%**	**$0,010**
Seed Round, $25k+	3	15	**8,00%**	**$0,015**
Private Sale, $5k+	2	10	**3,00%**	**$0,020**
Public Sale	0	6	**1,00%**	**$0,028**
NFT Staking	0	24	**6,00%**	
Development	20	16	**6,00%**	
Advisors	10	36	**3,00%**	

Token Holders	Cliff (months)	Vesting (months)	% of Total Supply	Price Per Token
Project Team	10	36	**15,00%**	
Rewards Vault	0	42	**27,00%**	
Liquidity & Market Making	0	18	**10,00%**	
Affiliate and Tournaments	0	40	**15,00%**	

TABLE 3. AGENTS IN MODEL

The model defines the following interacting agents:

Agent	Description
Team	8.Finance team
Game Users	game service users
Advisors	8.Finance Advisors
Farmers	users of the farming service
Stake User	users of the staking service
Marketing	Consumers Marketing and Affiliate Program
NFT staking User	users of the NFT staking service
Development	budget of the project, intended for marketing, development and scaling 8.Finance
Trader	special agent that was defined for speculation action modelling
Investors (Pre Seed, Seed, Private, Public)	8.Finance Investors

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APPENDIXES

Appendix 1. Graph of token circulation

Appendix 2. Model code and specification

Appendix 3. Revenue and Users Model