

Mathematical Model

Version 1

SecureCryptoPayments



Model of the Estimated Transaction Dynamics in the ICO

Let's introduce the legend of the ICO stages time scale (Figure 1).

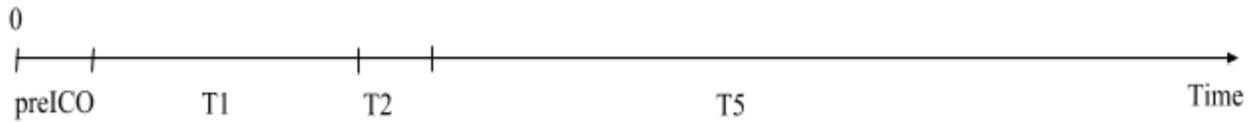


Fig. 1 - ICO stages

On this time scale the following legend is used:

- preICO - initial ICO (preICO)
- T1 - time period, project development (development)
- T2 - preparation for the launch at exchanges (ICO)
- T3 - time period from the launch at exchanges to the peak token price
- T4 - time period of potential impairment of token price
- T5 - time period of the token price recovery
- Numerical values: preICO = 1 month = 30 days, T1 = 4 months = 120 days, T2 = 1 month = 30 days, T3 = 5 days, T4 = 15 days, T5 = 160 days.

Total project duration is 360 days.

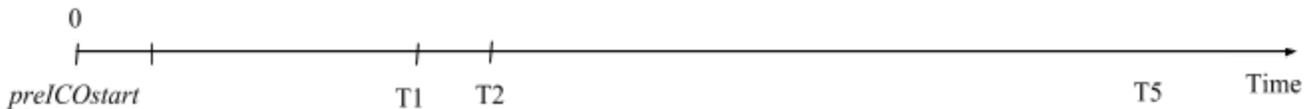


Fig. 2 - ICO stages with regard to its start

For the convenience of presentation, we will show the time periods relatively (Figure 2) from the moment of the project start, where they will have the following values:

ICO:

preICOstart = 0 days - preICO start time

preICOend = 30 days - preICO end time

T1 = day 151 - ICO start time

T2 = day 181 - ICO end time

T3 = day 186

T4 = day 201

T5 = day 360

The estimated number of transactions in the network during all ICOs is shown in Figure 3.

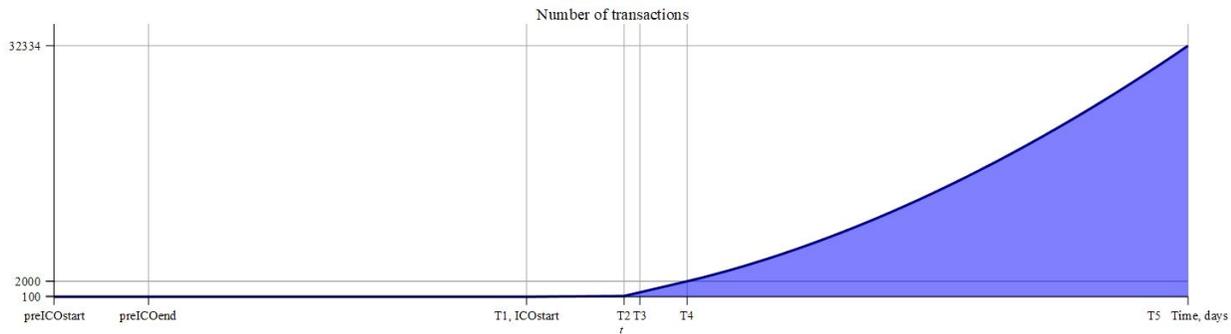


Fig. 3 - Estimated number of transactions

Analytically, we can describe this dynamics of transaction volume growth by a system of equations

$$N_{trans}(t) = \begin{cases} 0 & \text{at } ICOstart \leq t < ICO; \\ 0 & \text{at } ICO \leq t < T1; \\ Tr1 \cdot (t-T1) & \text{at } T1 \leq t < T2; \\ (Tr2-Tr1) \cdot (t-T2) & \text{at } T2 \leq t < T4; \\ (Tr2-Tr1) \cdot (t-T2) & \text{at } T4 \leq t < +\infty, \end{cases}$$

where

Tr1 = 100 transactions - estimated number of transactions in the network at time T2; Tr2 = 2,000 transactions - estimated number of transactions in the network at time T4; $\alpha = 1.9$ - power ratio of the transaction number growth in the network; t - time.

Model of Bonus Income for an Investor per SEC

The bonus income for investors is distributed as follows (Figure 4):

preICO: + 25% during the whole period

ICO: + 20% - the first day

+ 15% - the first week

+ 10% - the next two weeks

+ 0% - the fourth week

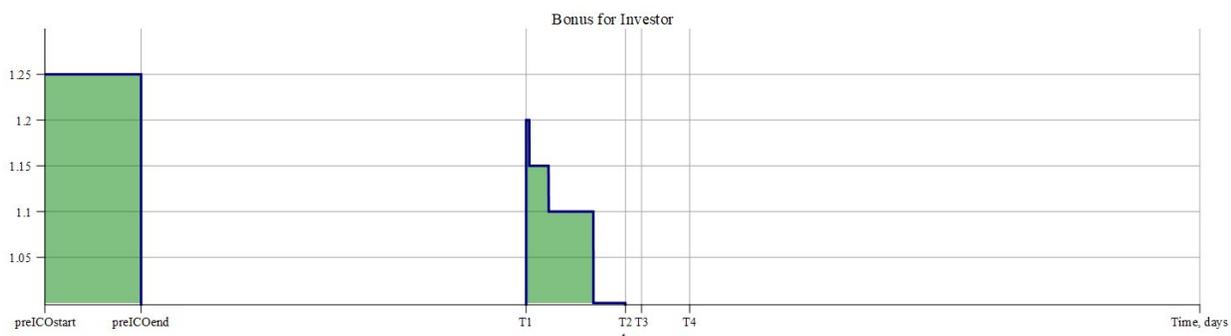


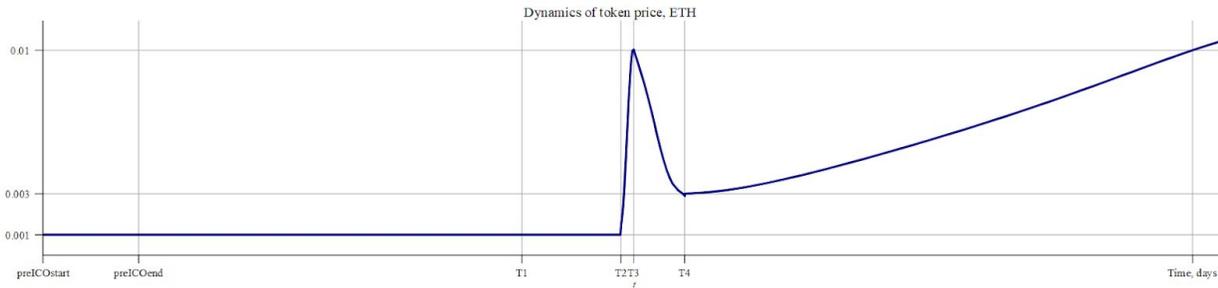
Fig. 4 - Bonus distribution for investors

In terms of an equation system, this distribution will look as follows:

$$\text{Bonus}(t) = \begin{cases} 1.25 & \text{at } \text{ICOstart} \leq t \leq \text{ICO}; \\ 0.00 & \text{at } \text{ICO} \leq t < T1; \\ 1.20 & \text{at } T1 \leq t < (T1 + 1); \\ 1.15 & \text{at } (T1 + 1) \leq t < (T1 + 7); \\ 1.10 & \text{at } (T1 + 7) \leq t < (T1 + 21); \\ 1.00 & \text{at } (T1 + 21) \leq t < T2. \end{cases}$$

Model of the SEC Price

Figure 5 represents the estimated dynamics of the SEC price changes.



Predictions for a longer time period:

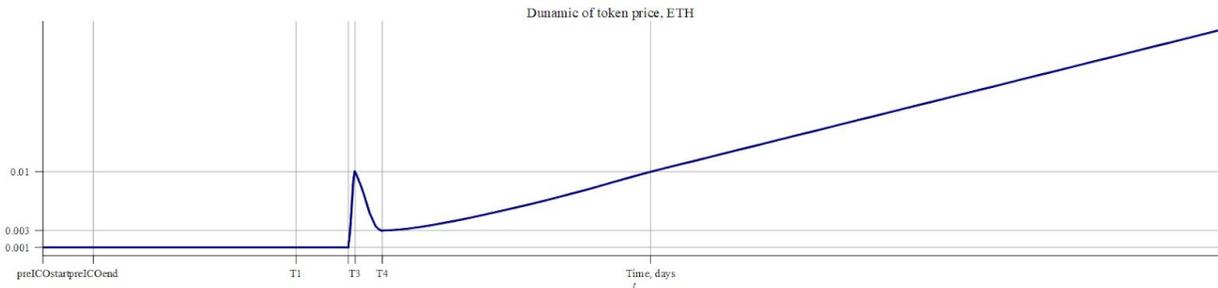


Fig. 5 - Estimated dynamics of the SEC price change

$$\text{TokenCost} := t \mapsto \begin{cases} 0.001 & \text{ICOstart} \leq t < T2 \\ 8.333333333 \cdot 10^{-6} t^3 - 0.007637500000 t^4 + 2.7996000000 t^5 - 513.0542625 t^6 + 47006.01459 t - 1.722489720 \cdot 10^6 & T2 \leq t < T3 \\ -3.429355295 \cdot 10^{-8} t^3 + 0.00003300754472 t^4 - 0.01270281212 t^5 + 2.443344574 t^6 - 234.8935016 t + 9029.282754 & T3 \leq t < T4 \\ -1.241763433 \cdot 10^{-13} t^3 + 1.798073451 \cdot 10^{-10} t^4 - 1.037120819 \cdot 10^{-7} t^5 + 0.00002987836203 t^6 - 0.004264235943 t + 0.2424540406 & T4 \leq t < T5 \\ 0.00005 t - 0.00005 T5 + 0.01 & T5 \leq t \end{cases}$$

Model of the Money Distribution System

According to the SEC network regulations, customers of the store still have 99% of their funds after the 1% fee has been deducted. In its turn, the 1% fee is distributed to investors and for network support (Service, Support, Servers, Maintenance, Development).

Let's also introduce a concept of optimistic ($Value_opt = 75$ USD) and pessimistic ($Value_pess = 55$ USD) value of an average transaction in the network. In this case client's money have the following dynamics (Figure 6):

$$ClientMoney_opt(t) = 0.99 \cdot Ntrans(t) \cdot Value_opt$$

$$ClientMoney_pess(t) = 0.99 \cdot Ntrans(t) \cdot Value_pess$$

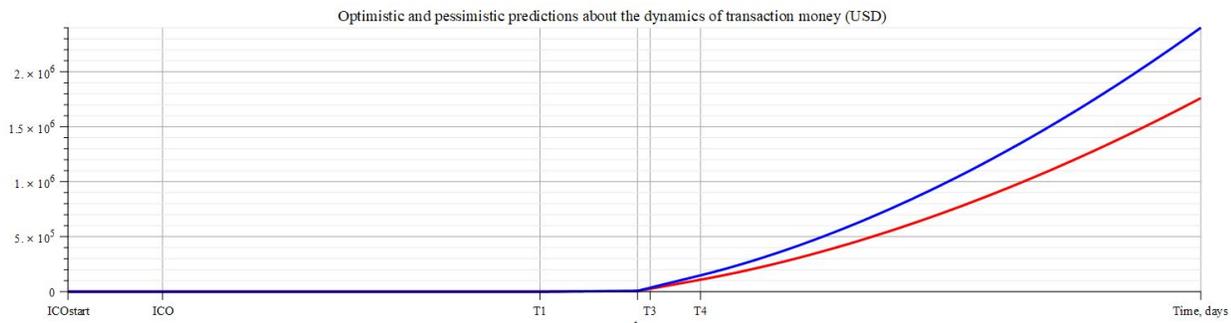


Fig. 6 - Predicted dynamics of the client's money in the network

In this case the investor's money (USD) is estimated as follows (Figure 7):

$$InvestorMoney_opt(t) = 0.005 \cdot Ntrans(t) \cdot Value_opt$$

$$InvestorMoney_pess(t) = 0.005 \cdot Ntrans(t) \cdot Value_pess$$

The funds (USD) for network support are estimated likewise (Figure 8):

$$InternalMoney_opt(t) = 0.005 \cdot Ntrans(t) \cdot Value_opt$$

$$InternalMoney_pess(t) = 0.005 \cdot Ntrans(t) \cdot Value_pess$$

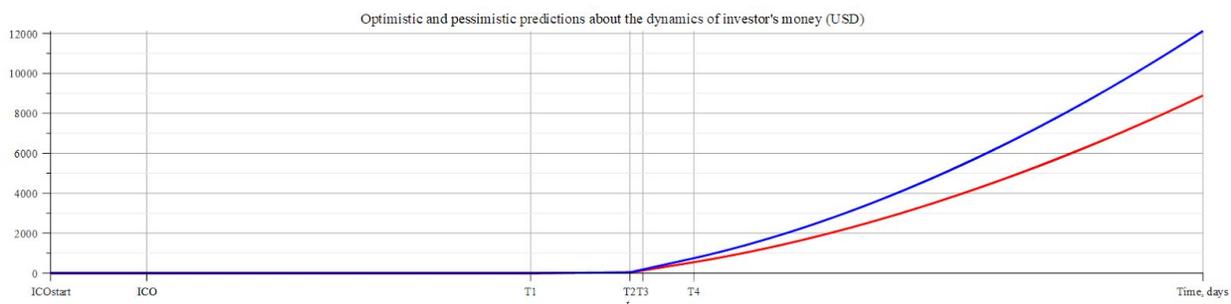


Fig. 7 - Predicted dynamics of the investor's money in the network

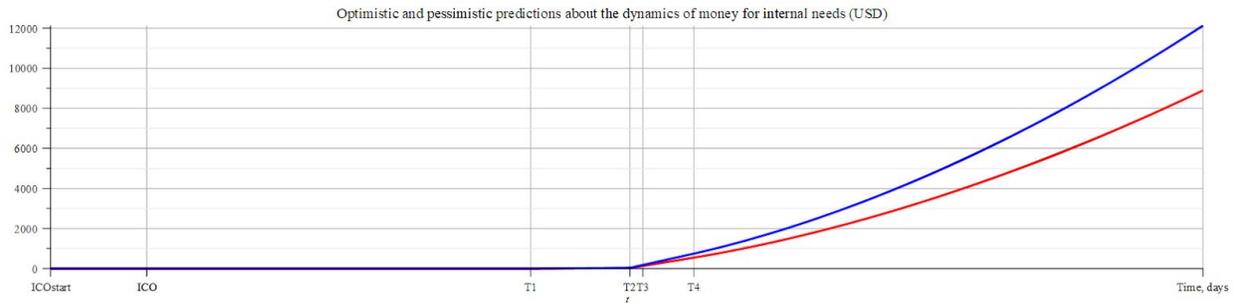


Fig. 8 - Predicted dynamics of the funds for network support

Model of the SEC Token Amount

preICO Stage

During the preICO stage, it is planned to issue 121,000,000 SEC. In numeric terms the SEC distribution looks as follows:

Total amount of SEC (100%) <i>SummaryTokensICO0</i>	121,000,000 SEC
Investors' SEC (75%) <i>TokensDirectSaleICO0</i>	96,800,000 SEC
preICO bonus SEC (25%) <i>TokensBonusICO0</i>	24,200,000 SEC

Investors' SEC (100%) <i>TokensDirectSaleICO0</i>	96,800,000 SEC
SEC for development and marketing (70%) <i>TokensDevelopICO0</i>	67,670,000 SEC
Partners' and mentors' SEC (15%) <i>TokensPartnersICO0</i>	14,520,000 SEC
Team's SEC (15%) <i>TokensCommandICO0</i>	14,520,000 SEC