THE TOKEN FUND

The Token Fund White Paper

Authors: Viktor Shpakovsky, Vladimir Smerkis, Evgeny Yurtaev

ABSTRACT

With the unprecedented rise of cryptocurrencies and blockchain technology, new opportunities are arising in field of investment. As the traditional type of economy is reshaping its form, the money will flow into cryptocurrencies, either for the speculative purposes of gaining capital profit or by supporting projects that are built on decentralised platforms. Importantly, individual investors with little knowledge of cryptocurrency content do not want to miss opportunities to be exposed to undervalued digital assets. This is why the The Token Fund is coming.

1. INTRODUCTION

The past and current trend of initial coin offerings (ICO) has led to more than 500 new cryptocurrencies being created which are traded daily. Some have proven to have gained trust and support among people in the community, whereas some have ended up in “pump and dump“ territory. Still, when analysing the price movement of 100 coins in the first half of 2016, average achieved yield is 357% and only 13 coins yielded negative returns. However, returns can be misleading and expertise in the investment field as well as an understanding of crypto coin content is needed to gain optimal exposure into the crypto investment universe.

Cryptocurrencies are an evolving investment asset which shouldn’t be overlooked by an investor willing to diversify its portfolio. As correlation between assets in the real economy is moving towards 1 (particularly at a time of distress on markets), cryptocurrencies have correlation close to 0. Therefore, assets from the new economy are serving as a natural hedge as they are disconnected from the traditional market and represent an alternative. Cryptocurrencies can be split into at least two types of assets:

- One group consists of pioneer currencies based on blockchain technology such as Bitcoin. This type of digital asset serves as an alternative for the transfer of wealth across the globe, being fully transparent, secure and effective. Its intrinsic value lies in its use as a medium of exchange and as a store of value. The number of transactions and demand drive the value of currencies such as these.

- The second group consists of “app tokens” that are more reminiscent of traditional company shares, where the company acts as a decentralised autonomous organisation. Such organisations have been growing exponentially in the last year as the community is perceiving the new economy as similar to the sharing economy. Importantly, such organisations can deliver value added services, which are comparable to the traditional economy but far more efficient and cheaper for the consumer.

We believe that the second group of cryptocurrencies, or better “app tokens” will, with the help of smart contracts, replace the traditional type of services. Growing interest in such assets may be promising something big, perhaps a revolution similar to the one the Internet provided in the early 90s. At that point, there wasn’t an option to invest in a service such as the Internet. Now we believe there is and the best way to achieve it is to diversify assets via an investment vehicle such as a fund.

2. INVESTORS

The target group of investors consists of individuals who either have some understanding about the cryptocurrency world or those who mainly want to diversify a small part of their assets into the new economy. It is expected that the large majority of people outside the community are still sceptical about cryptocurrencies and that it will take time to gain support among them. Nevertheless, inflated equity valuations, negative yields and a lack of alternative opportunities to invest in the current investment environment will force investors to take part in cryptocurrencies and businesses created upon blockchain technology. The exponential rise of blockchain technology used in real businesses is already delivering visible value added effects to the economy. Undoubtedly such a revolution, although gradual, will not be overlooked by the retail investors.

3. COIN TRADED FUND

Evidence from stock investing suggests that passive funds may be superior to actively managed funds in the long term, particularly if the investor seeks low volatility and a steady return of its assets. Passive funds track indices and have low transaction costs due to the lower required turnover. Currently there is no cryptocurrency index available, nevertheless passive funds can define their own investment policy with index characteristics.

Over the last 20 years, ETFs have become the most popular investment vehicle for both institutional and individual investors in investment finance. Growing far beyond their initial function of tracking large liquid indices in developed markets, ETFs now hold over $2.6 trillion of assets globally. ETFs are listed on an ever growing number of exchanges and are being used by investors in a growing number of markets. New investor segments continue to integrate ETFs into their portfolios and fund managers continue to introduce new products. With more than 5,400 products listed on 60 exchanges by 222 fund sponsors, ETFs are already a global phenomenon. Although ETF industry grew by 2,000% in last 13 years, it is still relatively small compared to the mutual fund industry which grew “only” by 120% in the same period. Total ETF assets under management currently amount to just over one-tenth of the total of the mutual funds. ETFs are widely expected to continue growing. PricewaterhouseCoopers expects ETF assets will double, reaching $5 trillion or more by 2020.

ETFs differ from traditional investment funds in their tradability, which makes them attractive to investors who are willing to buy and sell units of fund in a matter of seconds. Daily liquidity on the market is guaranteed by market makers, who, by exploiting arbitrage opportunities, are pushing the price of ETF to its net asset value. There are many kinds of ETFs on the market which are suitable for each type of investor, but we should not focus on that topic as this is not in the scope of this paper. Here, we focus on traditional ETFs that track indices, although no such index exists at the moment. Therefore, a method needs to be provided for the development of Coin Traded Fund (CTF) that will act as an index.

4. FUND MANAGERS

Fund managers are Viktor Shpakovsky and Vladimir Smerkis

As fund managers we are responsible for:

- Making of investment decisions
- Providing efficient, transparent and provable operations
- Ensuring security and taking contingency measures

5. INVESTMENT STRATEGY

The primary investment focus is on solutions that enable the essential autonomous infrastructure for supranational economy: decentralized computation, data storage and communications, decentralized exchanges, investment solutions, prediction markets, pegged assets protocols, cross chain gross settlement systems, identity protocols, DAO and smart contract frameworks, reputation systems and social networks.

In practice, creating an index which will be implied in The Token Fund portfolio structure is usually done by setting a structure according to market capitalization of known currencies. Being the most dominant currency by market cap, Bitcoin may easily takes more than 50% of all portfolio. That is why certain limits have to be imposed on the structure. Market cap shouldn't be the only factor affecting the index structure. Traded volume should play an important role, as well as the "free float" of the currencies.

The Token Fund token (hereinafter referred to as TKN) weighted by its market cap targets conservative investors. Note, however, that cryptocurrencies such as these have extremely high volatility in practice, compared to traditional financial instruments and are without a doubt risky investments. Daily volatility (standard deviation) in many cases exceeds 10%. On the other hand, cryptocurrencies have very low correlation (in many cases close to 0) when compared with one another. This is a very positive sign for fund efficiency at delivering risk diversification.

Seeking the optimal structure of The Token Fund portfolio is more art than science. As mentioned, currencies should be added to the portfolio based mostly on their market cap by applying some limitations:

- Only eligible currencies can enter the selection process (currencies based on blockchain technology).
- The portfolio should be limited to those currencies which are easily tradable on the exchange on a daily basis. Average daily turnover in last 6 months should therefore not be below 100,000 USD.
- Once a selection is made, the structure of the portfolio is based on pre-defined rules. A rational investor does not want to be too exposed to individual currencies, therefore maximum weight should be applied (25%).

- Because of the high risk of the cryptocurrency market volatility, especially the alt coin market, maximum weight of bitcoin may be applied more than 25%.

Once the portfolio structure rules are set, rebalancing rules should be defined. Namely, The Token Fund structure becomes very dynamic with the daily movement of prices, and the structure can become very non-representative of the market. Some currencies could add a lot of value and gain weight, whereas some lose it. New currencies enter The Token Fund and so on. Therefore, weekly or monthly rebalancing is proposed, whereby the fund managers makes the required transactions to reset investment fund structure in accordance with predefined rules. The fund managers reserves their right to rebalance the portfolio to its target structure within 1 day of the rebalancing date. Similarly, the weights of the fund's investments will be set according to the rules, where deviation of +/- 5 percentage points is allowed during the rebalancing period.

Predefined rules will be followed by the fund managers regularly unless specific market events occur (low liquidity of certain currencies, investments are too risky despite their growing market cap, systemic risk spreading, etc.). As mentioned, the fund managers will act in the interest of the fund's investors and their investments, therefore it reserves its right to overrule fund policy rules when an experienced team of currency analysts assesses that too risky investment decisions could be undertaken.

6. TOKENS

Supply of TKN depends on incomes and outcomes of fund's capital. Every time purchaser sends BTC or ETH to The Token Fund BTC or ETH address The Token Fund issues TKN based on a price which is calculated at 12.00 and 00.00 GMT each day.

Token Price = Value of Assets / Supply

Purchaser Tokens = Investments / Token Price - Entrance Fee

Every time purchaser sends TKN to The Token Fund account tokens are destroyed. Payout is calculated based on a price which is calculated at 12.00 and 00.00 GMT each day.

Token Price = Value of Assets / Supply

Investments = Purchaser Tokens * Token Price - Exit Fee

Also a purchaser can sell TKN in the open market.

7. ECONOMIC MODEL

Entry fee. Any time a purchaser wants to enter The Token Fund 5% of issued tokens is being deducted to reward fund managers, tech support and referrals. The allocation of rewards is the following:

- Fund managers: 4% of tokens
- Tech support: 1% of tokens

Exit fee. Any time a purchaser wants to exit The Token Fund 5% of bitcoins or ether of payout is being deducted to reward fund managers and tech support. The allocation of rewards is the following:

- Fund managers: 4% of bitcoins or ether
- Tech support: 1% of bitcoins or ether

Figure 2 shows rewards allocation for entering and exiting the fund.

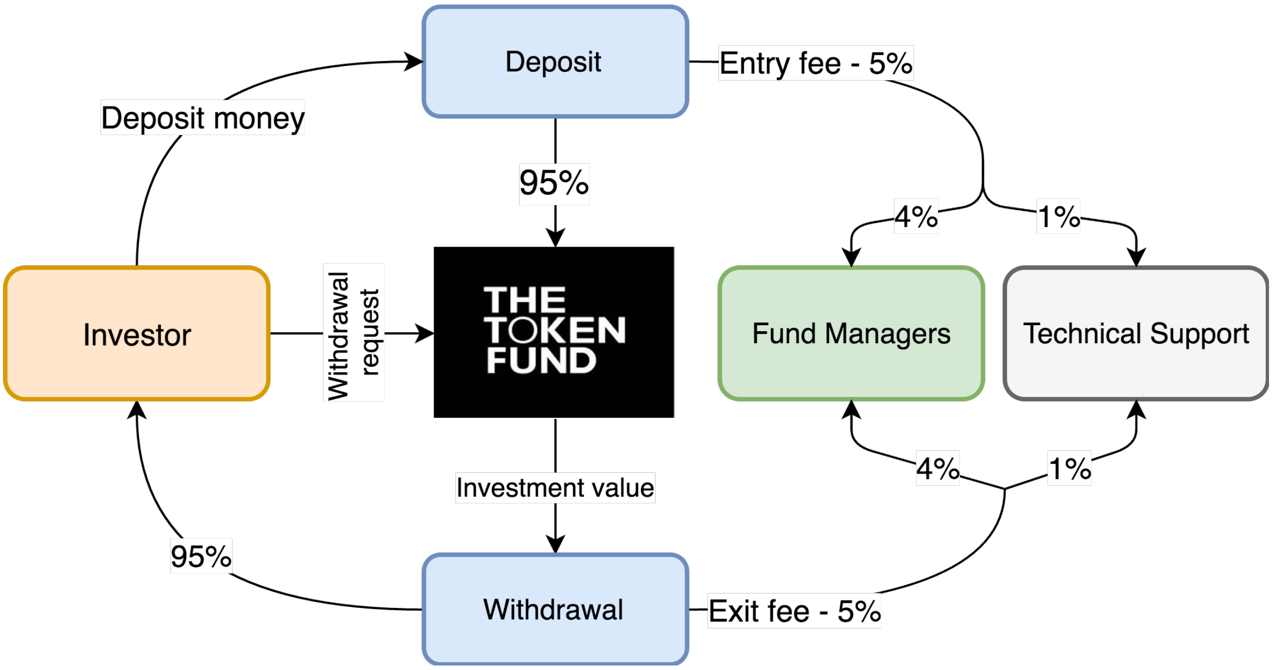

Figure 2. Deposit/withdrawal money allocation.

The tokens will be an Ethereum-based token of value.

Ethereum based tokens rely on a well-established Ethereum infrastructure, benefiting from several advantages:

- security and predictability;
- use of robust and well-supported clients (Ethereum-based tokens can be managed with official Ethereum clients);
- easier listing on exchanges with infrastructure already in place;
- Ethereum smart contracts enable a very transparent and secure way of profit-sharing among the token holders.

8. TECHNICAL SOLUTION

Components

The technical solution for The Token Fund consists of three main elements: User-facing website, backend server for asset management and smart contracts on Ethereum blockchain. Figure 1 contains basic technical solution overview.

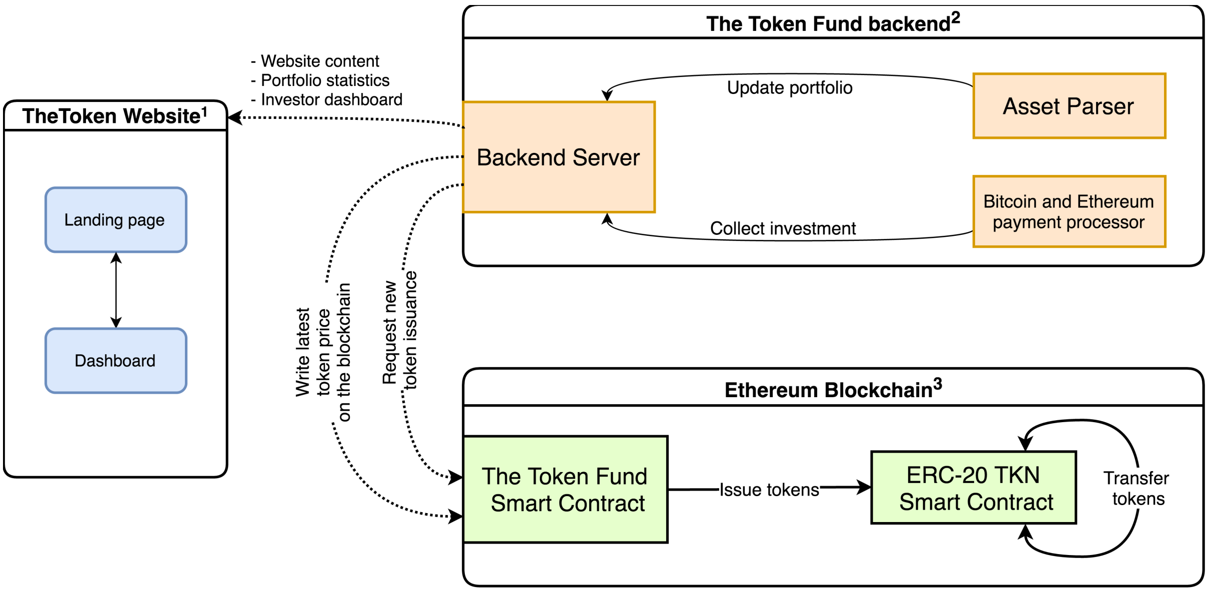

Figure 1. The Token Fund Technical Solution overview.

1. Asset management and the website

All the fund's assets are located at publicly accessible Google Sheet (https://docs.google.com/spreadsheets/d/1-17h6aLNXPtMDZRRLJk-TQQfv7-CdVj-g1Bo7iJTrrA/edit?ts=58ce265e#gid=719453274). Every 12 hours asset parser component calculates current portfolio value and fund performance using API of popular blockchain explorers in order to receive balances of fund wallets and information from the token smart-contract. Fund performance and portfolio composition from the table are graphically displayed on the front page of The Token Fund. In the dashboard an investor is able to create a wallet and back up the keys for it. An address provided by an investor or newly generated one is used by the service to issue new tokens.

2. Backend Service

Backend service is responsible for storing wallet addresses for investors and for interacting with Ethereum Smart Contract. It takes current token supply from TKN contract and calculates last token price based on the fund portfolio asset value. After that, it acts as an oracle by publishing the latest price of the token on The Token Fund contract. The backend is also responsible for initializing new token issuance once it gets investment in Bitcoin or Ethereum through the dashboard.

3. Smart Contracts on Ethereum Blockchain

The business logic of The Token Fund is controlled by two smart contracts on the Ethereum blockchain: one is a token that stores the balances of investors in the fund (TKN contract), and another is responsible for issuing new tokens in exchange for invested money (The Token Fund contract). TKN contract is based on the ERC-20 standard token contract with an extra function that allows new token emission. This function is only accessible by The Token Fund contract.

4. Investment flow

A regular way of investing requires sending bitcoin or ether to the personal investment address available in the dashboard. After receiving an investment, the backend triggers the function on The Token Fund contract that calculates the number of tokens the investor should be distributed based on the current price of the token. After that, the backend service executes issuance function on The Token Fund contract to mint new tokens for a new investor. Alternatively, investors can participate in the Fund by simply sending Ether directly to The Token Fund contract: this follows the same steps of calculating and minting new tokens for an address that sent Ether.

5. The code

You can find the code of all our contracts in our GitHub repository here: (https://github.com/etherionlab/the_token_fund_contracts) as well as verify the code of the TKN contract (https://etherscan.io/address/0x739c71235a9669f6b900490ab1c95310c19abc71) and The Token Fund contract (https://etherscan.io/address/0xb734c74ff4087493373a27834074f80acbd32827). The code of the asset parser is in this repository (https://github.com/etherionlab/the_token_fund_asset_parser).

9. RISKS

The purchase of TKN carries with it significant risks. Purchasers and fund managers are exposed to the following risks: inherent risk, loss risk, theft risk, regulatory risk, miscomprehension risk. By sending bitcoins or ether to address the purchaser agrees that he or she understands and accepts these risks and potential losses of all funds without a possibility to restore. Fund managers do not hold any risks except for risk of losing personal investments.

10. LIQUIDATION

The following events could trigger the liquidation procedure:

- Decision of 2 fund managers
- Fund managers alive is less than 1

The following procedure will be executed in case of liquidation:

- All available holdings are exchanged into ETH in 2 weeks period by tech support
- All ETH are split across TKN holders proportionally their share of The Token Fund

- All ETH are sent to the registered addresses

If there is an illiquid asset under possession, it is held by fund managers or a trusted person until it could be exchanged into ETH.