Whitepaper on App Token Funds

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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 two types of coin funds are proposed: Coin Traded Fund (CTF) and Coin Managed Fund (CMF).

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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.

Investment funds have proven to be successful in lowering the risk of volatile instruments such as cryptocurrencies. High volatility of price movement is offset by the diversification benefits funds can provide. Moreover, the low transaction costs typically associated with funds lead to higher returns. Importantly, funds provide constant liquidity, making redemption and subscription of money easy for the individual investor. This advantage is specifically important for some cryptocurrencies where daily liquidity is limited due to the early stage of their existence, or specific events that impact daily turnover.

2 NEW INVESTMENT FIELD

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.

3 FUND TYPE

All the mentioned issues of investing in cryptocurrencies can be mitigated by a fund that seeks optimal structure of its portfolio. Funds can be either actively or passively managed, as is the practice in investment finance. Both types of funds have their advantages and disadvantages when compared to one another, but importantly, they are complementary in their nature and serve different investor's goals.

Passive funds are much cheaper due to automatic portfolio rebalancing where less expertise in "coin picking" is required on the fund manager's part. Investment policy plays an important role in passive funds, as it defines portfolio structure very narrowly. Usually such funds want to represent some specific regional market or an industry where portfolio structure is set according to market capitalisation. This means investors can somehow "easily expect" which investments will be included in the portfolio. Eventually, these types of funds provide more stable returns and less price volatility as only the largest currencies or companies of the economy are included in the portfolio.

On the other hand, as its name suggests, actively managed funds gives much more freedom to the fund manager, who manages the fund's assets by some broadly designed rules. Much more expertise in the field of investment is needed from the fund manager and from the people involved in managing the fund, which leads to higher management fees. The goal of the fund manager is to deliver the best possible return versus risk ratio and thus he may include some investments in the fund, even if they are not the best representative of the current market and which have high price movement volatility. This means that fund returns depend much more on the fund manager's abilities to select superior assets. Such funds may charge performance fees to the investors and have certain limits on tradability of their investment units.

4 PASSIVE FUND – COIN TRADED FUND (CTF)

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 sponsors 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.

5 ACTIVE FUND – COIN MANAGED FUND (CMF)

The coin managed fund will remind the investor of a traditional mutual fund, with private equity fund characteristics. Firstly, participation in such a fund is by invitation only and a minimum subscription amount is defined. Units of a managed fund are not tradable, meaning the investor can exit the fund only through the redemption process. As the average investment in such funds will be less liquid than in a passively managed fund, redemption of tokens by the investor is limited to a period usually equal to 5 days. Although such a feature appears to be a drawback, it is set for the safety of all investors participating in the fund. Namely, the fund needs time to sell the positions of the fund if a particular investor, having a large position, is willing to exit the fund. The fund manager does not want to rush and sell large positions and thus put pressure on the prices of his investments.

As described, managed funds, being more dynamic in their portfolio structure, try to "beat" the market by delivering returns above the benchmark. This eventually means that the fund manager sets structure of the fund differently than in the case of ETFs, where investments usually have weights based on their market capitalisation. Here, there is much more focus on the fundamentals of each asset in the fund, meaning that the fund manager must use his investment expertise to pick the best assets from the investment universe.

All outlined characteristics of managed funds make them a valuable investment vehicle, which provides fresh capital to companies with growth or value potential and at the same time deliver a high return for the investor. As shown, a Coin Managed Fund (CMF) proves useful when the fund manager identifies interesting new tokens of value that promise high potential and can be added to the fund portfolio quickly without being limited to certain rules as in the case of CTF. This is reminiscent of hedge fund style investing, where there are not many rules defined. Therefore, it is very important that the fund manager earns the trust of the investment community in being an expert in his field to attract capital.

6 TARGET 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.

At the moment, cryptocurrency investors are people who have at least some understanding of the new economy. Nevertheless, there is huge potential in making an investment vehicle such as an ETF and an actively managed fund, which have proven successful in the traditional investment industry. Retail investors are familiar with these types of funds which could make them more keen to invest in cryptocurrencies.

7 THE CONCEPT

A CTF or CMF is managed by a fund sponsor (in our case ICONOMI), who balances the portfolio on a regular basis and creates units of fund. ICONOMI thus becomes the service provider for the fund as it sets its structure and makes trades according to the defined rules (CTF) or according to the decisions taken by the team of experts who are managing the fund (CMF). ICONOMI itself also holds part of the fund and acts as pricing provider at the beginning of trading (specifically important at CTF). More on the technical details of trading and pricing will follow.

Each fund will be denominated in its own tokens. In order to establish an initial portfolio, ICO is proposed at the inception of a fund, where the fund sponsor will lead the process. Later, new participants can enter the fund either through the purchase of tokens on the stock exchange (only applies to CTFs) or by buying new tokens that the sponsor creates as is regular practice in ETFs and managed funds (creation units). This implies new ICOs (or better "SCOs" as secondary coin offerings) of a fund will occur regularly (depending on demand). On the other hand, investors who wish to redeem their tokens will either sell them on the stock exchange (only applies to CTFs) or exit the fund through the redemption process.

In a CTF it is important that in a liquid and efficient market, the price of a CTF token will always represent the price of underlying assets (cryptocurrencies) in the fund, reduced for management fees and other expenses. This implies efficient pricing of a CTF token.

On the other hand, CMF tokens are created and redeemed based on each individual investor's entry or exit of the funds. Tokens are thus not tradable and are subject to each investor.

ICONOMI, as the service provider, will charge a yearly management fee, calculated on a daily basis, which applies to both CTFs and CMFs. A performance fee applies only to CMFs after a certain threshold return is reached, defined as the minimum yearly cumulative return. Token holders bear any expenses incurred by the service provider, such as transaction costs.

It is expected that the managed coin fund will be much more dynamic in its structure and pricing as many new entrants (ICOs) are expected to enter the market. ICONOMI will appoint industry experts, who will, based on the review of underlying philosophy of the value token issuer, assess the eligibility of adding such coin into a managed fund.

8 CTF INVESTMENT POLICY

In practice, creating an index which will be implied in the CTF's portfolio structure is usually done by setting a structure according to market capitalisation of known currencies. Being the most dominant currency by market cap, Bitcoin easily takes more than 80% 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.

Table 1: Market Cap, July 2016

Ticker	Market cap in USD	Share	Share w/o BTC
BTC	10,579,345.013	83,62%	
ETH	886,977,343	7,01%	43%
XRP	236,846,996	1,87%	11%
LTC	205,908,462	1,63%	10%
DAO	100,322,312	0,79%	5%
XEM	88,200,900	0,70%	4%
DASH	45,914,953	0,36%	2%
MAID	30,971,872	0,24%	1%
DOGE	29,463,920	0,23%	1%
LSK	29,103,700	0,23%	1%

CTF index 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, see Table 2) when compared with one another. This is a very positive sign for fund efficiency at delivering risk diversification.

Table 2: Correlation matrix, daily returns in first half 2016

	ETH	FCT	XEM	SC	EXP	MAID	NXT	BTS	GAME
ETH	1,00	0,14	−0,05	0,10	0,31	0,38	−0,13	0,20	−0,01
FCT	0,14	1,00	0,14	0,05	0,01	0,28	0,24	0,27	0,12
XEM	−0,05	0,14	1,00	0,07	−0,01	0,02	0,32	0,26	0,21
SC	0,10	0,05	0,07	1,00	0,25	0,03	0,04	0,22	0,09
EXP	0,31	0,01	−0,01	0,25	1,00	0,43	0,02	0,20	0,04
MAID	0,38	0,28	0,02	0,03	0,43	1,00	0,02	0,28	0,12
NXT	−0,13	0,24	0,32	0,04	0,02	0,02	1,00	0,28	0,19
BTS	0,20	0,27	0,26	0,22	0,20	0,28	0,28	1,00	0,26
GAME	−0,01	0,12	0,21	0,09	0,04	0,12	0,19	0,26	1,00

Seeking the optimal structure of a CTF 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%).
- Since certain currencies have a much higher market cap than others, categories or brackets should be utilised (3). For instance: the top bracket would make 50% of the portfolio, whereas the second would make 30% and the third 20%. The top bracket takes one third of the currencies being selected in the first stage and has the highest market cap and so on. Weights inside a bracket are calculated on a market cap basis. This would enable currencies to be structurally somewhat more evenly distributed.

Once the portfolio structure rules are set, rebalancing rules should be defined. Namely, the CTFs 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 CTF and so on. Therefore, monthly or quarterly rebalancing is proposed, whereby the fund sponsor makes the required transactions to reset investment fund structure in accordance with predefined rules. Since investors prefer low transaction costs of the fund, rebalancing is done at the sponsor's discretion, acting with best possible practices to preserve the value of the fund. Possible front running of market participants (i.e. in advance buying of shares which are expected to be included in the fund) will be offset by a gradual rebalancing technique. The fund sponsor reserves its right to rebalance the portfolio to its target structure within 10 days of the rebalancing date set at each end of quarter. 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 sponsor 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 sponsor 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.

9 CMF INVESTMENT POLICY

As described in section two of this document, cryptocurrencies can be split into at least two groups. The Coin Traded Fund will focus more on the second group of currencies or more properly "app tokens", which have been evolving at a fast pace recently. These app tokens remind us of publicly traded company shares, where the underlying idea is that the owner of such a share participates in the company (or better, new economy) in the form of a consumer or a service provider. We believe such app tokens represent the largest breakthrough in the crypto world and a new type of economy.

The Coin Managed Fund has a much more broadly designed investment policy than the Coin Traded Fund. The investor should trust the fund manager (in our case ICONOMI) and his abilities to manage the fund as an expert in the field. Namely, ICONOMI will appoint a team of specialists who regularly screen market developments and react on the news and market expectations. It is crucial that the fund manager understands and evaluates the underlying idea that new app tokens are promising at their ICO stage. Without detailed knowledge and years of experience with cryptocurrency content, such tasks cannot be efficiently done.

Perhaps even more important than investment policy of the CMF is the fund's politics regarding an investor's entry and exit of the fund. As noted, CMF acts as a private equity fund and has to impose certain limits regarding the tradability of tokens, which is important for the fund managers calculation of the performance fee. The fund is suitable for investors who are targeting long term return and wish to participate in a fund over a longer period. Note that this is not necessarily the case with CTFs, where the investor can trade tokens in a matter of seconds.

ICONOMI, as the fund manager, will focus primarily on the analysis and evaluation of app tokens being issued during ICOs. In order to make the fund efficient and the portfolio well-diversified, different classes of app tokens will be created, which will be based on the type of service they provide. Below is an example of categorisation which the fund manager will pursue.

Table 3: Categorisation of App Tokens

Ticker	Name	Class	Description
ETH	Ethereum	Platform	Decentralised platform for building decentralised apps.
STEEM	Steem	Media	Steem is a blockchain-based social media platform where anyone can earn rewards.
DASH	Dash	Storage	Dash is an open sourced, privacy-centric digital currency with instant transactions.
MAID	MaidSafeCoin	Platform	The SAFE Network is a decentralised data and communications network that provides a secure, efficient and no cost infrastructure for application developers.
LSK	Lisk	Platform	Blockchain applications written in JavaScript. Running on sidechains.
DGD	DigixDAO	Gold	Digix is an asset-tokenisation platform built on Ethereum.
SC	Siacoin	Storage	Enterprise-Grade collaborative cloud for data storage.
SJCX	Storjcoin X	Storage	Distributed, encrypted, and blazing fast object storage, where only you have access to your data.
GAME	GameCredits	Gaming	GameCredits is the first free open-source gaming currency made by gamers for gamers and developers.

10 SUPPORT BY THE FUND MANAGER

Besides the support the fund manager provides with the establishment of the funds, executing trades and the pricing of tokens, it will also set up the website and all necessary infrastructure to inform investors about the net asset value of the fund. The fund manager will constantly calculate the net asset value of the fund, based on the live prices of underlying securities in the fund (from eligible crypto exchanges). Buyers and sellers of CTF and CMF tokens will thus always have information about the value of their holdings. In CTF, it should be expected that once daily trading becomes high in volume, speculative investors will exploit arbitrage opportunities and bring the token price to the equilibrium level. This will lead to efficient pricing for all participating investors.

The fund manager will aim to deliver the best possible information platform about the fund's investments as well as developments on the global cryptocurrency markets. Investors will in turn have available information about their investments, receive regular updates on the fund etc. Tools developed by ICONOMI will enable them to calculate their return on investments and perform analysis of their portfolio.

11 SIMULATED CTF RETURN

We have simulated performance of a CTF, based on the realised prices of 9 cryptocurrencies in the first half of 2016. Importantly, besides achieving extraordinary returns, the results also show low volatility of price movements.

Figure 1: Simulated CTF return

12 CONCLUSION

As shown in this paper, there is high potential in creating a cryptocurrency or app token fund which itself is denominated in tokens. In this paper we presented two types of funds which we believe will attract the interest of investors.

We have applied a traditional investment vehicle, such as an ETF, to the new economy and proposed new rules and methodology for having a fully functioning fund called CTF, which aims to best represent the cryptocurrency market. Note that there are unlimited variations of funds of which the structure and performance rely on predefined tactics (i.e. style, growth, value, momentum, low volatility, equal weight, fundamental etc.). Undoubtedly, with the evolution of funds in the cryptocurrency world, such funds will multiply in numbers. Simulation shows CTFs can mitigate the risk of highly volatile currencies and still achieve high return. As investors have their own risk profiles, such investment vehicles can help to establish tailor-made products for each group of investors. We developed market cap based rules for the CTF structure that we believe will best represent the current cryptocurrency market.

The second type of fund is much more actively managed and oriented towards the “app token” type of cryptocurrencies, which are evolving at a fast pace and have large value potential in terms of the services they provide. The actively managed fund, called the Coin Managed Fund, will aim to deliver the high returns associated with “coin picking” expertise that ICONOMI as a fund manager will provide. New coins issued during ICOs will be carefully analysed and their potential evaluated. An appointed team of specialists in cryptocurrency content knowledge will regularly screen market developments and react on the news and market expectation. These funds remind the traditional investor of private equity type funds, which were usually reserved only for wealthy and institutional investors.

It is expected that the investment vehicles as proposed in this paper will find their customers who will, on the other hand, want to receive the best possible information about their investments. The fund manager will provide high transparency of its decisions regarding the fund’s transactions. Moreover, daily content will be provided and investors will have an overview of their investments with tools available to analyse their portfolio.