

Joint Commonwealth Fund: A Crypto Social Impact Fund for Universal Basic Income

Joint Commonwealth Inc.
growing wealth for all

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Joint Commonwealth Inc. is incorporated in Taiwan (Republic of China) on July 2018 with a company registration number of 50791133. Joint Commonwealth Limited is operational in United Kingdom since Oct. 2022 with a Company Number of 9628635.

Any individuals involved in preparing this document are not and will not be selling tokens and have prepared on behalf of the legal entity that will conduct the relevant token sale.

2 INTRODUCTION

Technologies such as AI, robotics, and VR have accelerated to allow knowledge enterprises to grow rapidly. As we improve efficiency, people are handling less work, as Elon Musk commented: "There will be fewer and fewer jobs that a robot can't do better" [3]. Unfortunately, while barriers to innovations have become lower, the bars for tech services to be financially successful also have risen, as most Internet economies exhibit the "winner-take-all" effect, where a winning service will dominate a given market (Google in search, Facebook in social network, etc.). Also due to its knowledge-intensive nature, massive economic success does not depend on head-count (WhatsApp employed only 50 people for its 900M customers when purchased by Facebook) [4].

As jobs continue to be knowledge-based, adequate life-styles become more difficult if one has not invested enough to gain sufficient skills in the knowledge economy. While improving education is vital, the more pressing question is: as middle-class shrinks, how shall people with lower socio-economical status to sustain basic needs in order to upgrade knowledge and skills? [15]

The concept of an *Universal Basic Income* (UBI, or simply *basic income*) has been proposed as a potential solution to address the paradigm shift in jobs. Basic income is designed as a citizen's right (much like the rights to vote or be educated), where citizens receive money regularly for a basic living.

Basic income has been intended to provide protection for people of less socio-economic status, so that for example: 1) families may care for kids or elderly at home, without having to worry financially; 2) workers may refuse jobs with poor conditions, and not be forced to work; 3) aspiring artists or entrepreneurs can experiment and explore career paths for social or artistic values [6].

But how to fund basic income? Which likely requires a large sum of money. Warren Buffett once mentioned: "most investors, both institutional and individual, will find that the best way to own common stocks is through an index fund that charges minimal fees." [11] The rationale is simple: research has shown that index funds, though relatively simple to operate, actually outperform most actively managed funds. As index funds do not require complex analysis or systems, the operation costs are often low (an annual management fee of 0.06%, compared with the average 0.47% fee for active funds) [12], allowing more profits for the investors.

If we use an index fund to grow asset value and pay dividends to participants on a regular basis, a passive income stream can be built. When such passive income can satisfy certain "minimal living standards", it can be said to provide "basic income". Although different places may have different living standards, if hundreds to thousands of funds of such nature are built, basic income may become a reality.

Our goal is to present the design and feasibility of such as a social impact fund, using cryptocurrency as its main investing instrument. While other asset types (such as stocks, bonds, estates, collectable, precious metals, or fiat currencies) may also be used, we choose cryptocurrency as: 1) the expected rate of return and growth of cryptos and the underlying blockchain trend may be much higher than any other known assets; 2) to provide a global fund which may be potentially accessible to any person in the world (i.e., a *world citizen*). As crypto's ease of transfer and conversion to fiat currency

is unparalleled, the admin costs of distributing UBI can be further reduced, making it more accessible and cost effective. Our vision is to support over 1 billion people with UBI by 2040.

Wikipedia describes cryptocurrency as "a digital asset designed to work as a medium of exchange that uses cryptography to secure its transactions, to control the creation of additional units, and to verify the transfer of assets" [7]. It is an emerging global phenomenon, for our purpose we are concerned with the following:

- (1) Currently (Jan. 2023) there are 22,000+ cryptos issued by the private sector. As a crypto system may be maintained by 50 ~ 100 thousand *mining machines* worldwide (for Bitcoin alone) [1], it is almost impossible to shutdown by any single entity or government. There are also more than 500 crypto exchanges worldwide, making government intervention to exchange with fiat currency extremely difficult (if not impossible).
- (2) Each cryptocurrency has a *market value* as determined by the buy/sell prices on a given crypto exchange (like how fiat is traded at currency exchanges). However, the value of a crypto mainly lies in how much trust people are willing to place for its current and future prospect to transfer and store values, prices thus may fluctuate greatly (as governed by market economy and not regulations).
- (3) Cryptocurrency is secure in the sense that its transaction history is difficult to modify, and its supply cannot be easily manipulated (unless considerable computing power is applied, which is often not economical). However, as crypto transfer is determined by the simple knowledge of a user's *private key*, storing and securing private keys become the main security challenge, and this responsibility rests at the holder (as opposed to fiat currency, where banks are assumed to hold and manage people's money safely).

Given crypto's current status, we suggest that the best way to hold and invest is via a comprehensive index fund, that can balance out the fluctuation in prices of individual cryptos.

We propose to build an index fund that is composed entirely of cryptocurrencies, with regular portfolio re-balancing, so that asset values may grow over time. Our fund issues its own crypto token called *JCF Token*. By holding a single JCF token, one is holding a number of crypto assets. A portion of the fund's profit will be given to token holders in the form of dividends. This will generate passive income for the holders. When this income can cover basic living expenses, a token holder will effectively have basic income.

Existing funds often pay dividends in proportion to the securities an investor holds. To realize basic income in JCF, only half of the dividends are paid by token ownership, the other half is *equally* distributed among all currently verified token holders (both individuals and institutions). This way, we effectively build wealth re-distribution as part of the fund.

When the fund starts, initial token holders are mostly investors. However, when dividends are distributed in the form of new tokens, some percentage is "donated" to a person or an organization the token holder wishes to support. This way, the diversity of token holders will increase over time, providing a passive income that may become basic income for financial protection.

3 JCF

Our crypto social impact fund is called *Joint Commonwealth Fund* or JCF, it is modeled after one of the first crypto index funds Crypto20 [5] with two main differences: JCF is an *open fund* and pays dividends. Funds such as Crypto20 produce more return for investors with more stake, while wealth in JCF is more distributed: those who invest less actually have higher Return on Investment (RoI) than those who invest more. The wealthy investors however, create social values by realizing basic income.

3.1 Open Fund

JCF is an *open fund*, meaning that the period to invest is still open after the *Initial Coin Offering* (or ICO). In contrast, Crypto20 is *closed* such that no more tokens are created after the ICO. The choice to open JCF is so that as many people as possible may join JCF for financial protection. JCF is designed to release a total of roughly a trillion tokens (1,048,575,000,000 tokens). Given United Nations' estimated world population of 11.2 billion by 2100, each person can hold 88.8 JCF tokens on average [8].

Our design for JCF is to allow investors to join at will at the current Net Asset Value (NAV) of the fund. NAV is essentially how much each token is worth based on the value of the underlying assets. The timing for asset allocation is at the discretion of the fund mechanism and may not be immediate. This allows for both an open fund and the flexibility in asset acquisition. While tokens can be purchased continuously after ICO, we do wish to limit its total supply, which increases annually after the ICO.

3.2 Dividend Plan

Re-investing profit is a common strategy to maximize a fund's growth potential. Warren Buffett uses this for Berkshire Hathaway, which does not pay dividends as a rule [2]. The reason is simple: if the fund is effective to create wealth, investors are better off by keeping their money in the fund than out of it.

However, while wealth can be built in the long-term, it does not address the immediate needs for cash, which is of concern for most people. The fact that most people need cash regularly, indicates that Buffett's approach cannot support people who require cash to live, or have little extra money to put away. Unable to benefit from this strategy, many people are locked in cash-earning cycles, and cannot afford to free up the time to upgrade life.

To provide regular UBI, we design JCF as a *dividend-paying fund* where regular dividends are paid from a *dividend pool*. ALL of the fund's *profits*, defined as the increase in JCF token's NAV in USD over a fixed period, are first put away to the *dividend pool*, which acts as a reserve for the fund profit. If the fund operates at a loss since the last dividend payment, the pool receives no new contribution. To ensure that JCF can be a stable passive income vehicle, dividends are paid from the *dividend pool* regardless of the fund's performance, as long as the pool still has assets. The *dividend pool* is owned by the fund's managing organization, as a form of public trust for passive/basic income distribution.

At the onset of each dividend payment, any increase in NAV (i.e., profit) is first converted to new tokens as contribution to the *dividend pool*. This brings NAV back to the initial offer price of USD 100. This process repeats continuously until the token's maximum

supply (i.e., hard cap) is reached, only then will NAV start to increase without limit. At that stage, the total fund should be large enough, and the *dividend pool* shall be set minimally as a designated percentage (20%) of the total fund (i.e., if the *dividend pool* is less than 20% of the total fund, it will increase and be kept at that ratio).

In most funds, dividends paid are determined mainly by how many shares an investor holds, the higher the ratio, the more dividend received. As our purpose is to provide *all* fund participants passive income that could grow into basic income, the dividends are given with the following approach: First, 25% of the *dividend pool* becomes the *dividend tokens* payable. This ratio is called the *dividend payout ratio*. The rest of the 75% remains in the *dividend pool*, and acts as a form of *retained earnings*. Then, the following rules are applied to the dividend payable:

- (1) 20% of the dividend payable are reserved to support JCF's operations, as a form of *performance fee* in private equity funds. Of which, 13% is "team tokens" and 7% is "donation tokens" (see below).
- (2) 40% of the dividends are paid as *common dividend* according to token holders' holding ratios (i.e., the traditional dividend).
- (3) the other 40% is *shared dividend*, and is equally distributed to every *verified* token holder, regardless of their holding ratio. The verification should adhere to the Know Your Customer (KYC) requirements of each jurisdictions.

Token holders can set their default preferences for the dividends received, including: 1) withdraw to external personal wallets; 2) keep the dividend to reinvest to leverage compound interests; 3) donate to individuals or social organizations at the token holder's choice. We will allow token holders to set the default ratios for each of the three actions so that they are executed automatically on the token holders' behalf (e.g., one may decide to keep 100% dividend for reinvestment purpose, or donate 30% to a chosen organization, and 70% to withdraw automatically for regular passive income).

The above design is to ensure that: 1) some dividends are paid to everyone regularly, as long as the pool has assets; 2) wealth redistribution is built-in, such that every investor/holder has a direct positive impact on other participants' financial well-being.

Note that this wealth redistribution is both intentional and built-in. While governments also perform wealth redistribution via taxes and social benefits, our mechanism is much more simple, transparent, and low-cost (in terms of the administrative efforts).

By using blockchain, the redistribution is fully transparent and done automatically by a software *smart contract* without human interventions, and without manual efforts to check for eligibility or admin (e.g., calculating how much to re-distribute and performing the re-distribution). Once the dividend pool becomes large enough, it could operate basic income at little to no efforts for the fund managers, lowering the fund's management fee.

The existence of this *dividend pool* also serves as an asset repository for the fund, adding safety to both JCF's long-term operation and participants' wealth. One interesting effect is that because the dividend pool acts as a forced saving mechanism, it also protects individual token holders from undisciplined or financially unsound behaviors.

Table 1: Token Summary

Type	BSC - BNB Smart Chain
Maximum Supply (Hard Cap)	1 048 575 000 000
Available for Purchase (Year 1)	1 000 000
	(double every year for 20 years)
Minimum Contribution	10 USD
Dividend Payment Period	Monthly
Entry Fee	0%
Annual Fee	0%
Exit Fee	2%

Table 2: Dividend Distribution

Type	Percentage
Team Tokens (advisory, operation, marketing)	13%
Donation Tokens (to individuals or organizations)	7%
Common Dividend (paid by holding ratio)	40%
Shared Dividend (split among KYC-verified holders)	40%

3.3 Identity Verification

As JCF tokens may be transferred from an investor to non-investing individuals, to ensure the fairness of the dividend mechanism, we require real identities be verified as an individual or social organization, before a token holder could receive any dividends. Token holders whose real-world identities have not been verified simply cannot participate in any dividend pay-off. We will offer our own KYC process initially but may adopt 3rd party identify verification process such as Civic [13] or Jumio [14] in the future.

3.4 Token and Dividend Distribution

JCF is designed to be a privately held social impact fund that will have many participants. With a large user size, the social benefits of wealth redistribution will be more visible, as more people in the low asset bracket would benefit from the redistribution. Additionally, as JCF is a long-term fund, its tokens are released over the course of a long period of time. JCF has a token release schedule that increases the supply each year over a period of 20 years. The basic idea is that 1 million tokens (1,000,000) JCF tokens are initially released, the supply is doubled every year for 20 years, with a maximum supply of 1,048,575,000,000 tokens.

Initial offer price of a JCF token is USD 100, prices after the initial offering will be determined by current NAV of the token [9]. This way, additional token owners will always join the fund by purchasing tokens at the same net value as existing token holders. Potential advantage for early participants in the fund is to start when the overall crypto market is not yet matured, thus the potential for growth is highest.

Token holders can recommend social organizations to receive JCF dividend donations. Pending their approvals, the organizations will receive the donated tokens for any purpose at their disposal (from holding to giving to people in need). The JCF team receives a combined of 13% of the dividends, while donation recipients will receive 7%. All verified JCF dividend recipients (both individual or

organizations) will participate in the dividend-sharing at the next regular dividend payment event.

3.5 Token Withdrawal

Each JCF token represents a collection of the underlying crypto assets, and thus have a *real* market value (i.e., its NAV). If a token holder no longer wishes to keep his or her tokens, a *withdraw* function from JCF's smart contract can be provoked at any time, and the token holder can redeem the tokens by returning them to Joint Commonwealth Inc. in exchange for major cryptos of equivalent value. The redeemed crypto asset, after deducting an exit fee (2%) and a small transfer fee, will be sent to the token holder's registered wallet address.

This mechanism ensures that the NAV of JCF tokens represents an intrinsic floor price for the token's market value. A certain amount of BNB will be stored at the JCF smart contract, for the purpose of fulfilling such automatic withdrawals.

3.6 Management Fee

To support as many participants as possible to JCF, we decided to make JCF as a *0% entry / annual management fee* fund. Part of the reason we can support such design, is that as an index fund selects and manages its assets mostly via rules and algorithms, JCF's operation and maintenance costs can be kept quite low.

However, to support our operations and cause, we do reserve 20% of the dividends paid for the JCF team and donation recipients as described previously. For investors, this equates to a 20% performance fee that is only charged when the fund returns a profit via dividend payments.

To encourage long-term holding and discourage frequent trading, we do charge a 2% exit fee when JCF tokens are withdraw at the current NAV. The exit fee is deducted automatically from the withdraw total and sent to the token holder's registered wallet address of choice.

3.7 Token Offering and Exchange Mechanism

JCF tokens will be given to fund participants via token sales throughout the fund's operations. For released tokens, we may work with crypto exchanges to have JCF listed, or allow JCF Tokens be exchanged via Decentralized Exchange (DEX) mechanisms, so that tokens can be swapped hands. However, as Joint Commonwealth Inc. will offer both token purchase and redemption, listing on exchanges is optional and not required for JCF's operations.

As JCF is designed to provide passive income that could enable basic income eventually, we do encourage the unconditional transfer of JCF tokens from existing holders to either individual or social institutions, so that the social benefits of JCF can be more widespread and immediate.

Wealthy individual or institutional token holders will be encouraged to give away, or donate fiat cash to purchase tokens for the purpose to provide passive income support for individuals in need. Incentives will also be designed to encourage such behaviors. For example, token holders can specify that a certain percentage of their regular dividend profits be given or donated to social organizations of their choices.

3.8 Rebalancing

Index funds are rule-based investment vehicles, and rebalancing is the act of changing the relative ratios of a fund's holding assets according to a set of rules to grow total asset value over time. It is the core operation of an index fund, and the main driving force behind a fund's performance. Good rebalancing should be easy to administer and mirrors closely the model index's performance.

We divide the main aspects of rebalancing into *ratio determination*, which is to decide the ideal holding ratio at any given time; and *rebalancing procedure*, which is the actual act of performing rebalancing, given the ideal holding ratio.

3.8.1 Ratio Determination. There are several key parameters to an index fund's design, the first is the number of assets it intends to hold. For example, the S&P 500 index fund is composed of the top 500 companies' stocks that comprise the S&P 500 index. Crypto20 holds the top 20 cryptocurrencies (by market value) in its portfolio.

A second parameter is the maximum ratio of a given asset to hold, to prevent a given asset from dominating the portfolio, increasing the risk impact of that particular asset to the whole portfolio. Crypto20 for example, adopts a ratio cap of 10%, meaning that no asset will be worth more than 10% of the total asset value. Although it is possible that this ratio could grow during a rebalancing period (if the asset value has increased), this will often be corrected at the next rebalancing action.

We choose our top 10 cryptocurrency based on the actual market price for each crypto from CoinMarketCap [10]. Our initial choice is to hold 10 top cryptocurrencies, with a maximum holding limit of 20%. The choice is based on the observation that currently the top 1 crypto Bitcoin is still the most trusted which drives most of the index's behavior. There is also less management complexity with just 10 assets. These numbers however are subject to annual review and modifications of our rebalancing rules, which will also be made public during our annual report of the fund's performance.

Our rules to determine the ratio is thus the following steps:

- (1) Obtain the market values for each asset in current portfolio to determine the fund's total market value.
- (2) Determine the current top 10 cryptocurrencies as retrieved from CoinMarketCap.
- (3) Starting from the largest asset, set its ratio to match retrieved ratio up to the holding limit.
- (4) Continue step 3 for each cryptocurrency to hold, until all market value are assigned.

In the end, we will obtain a targeted holding ratio for each of our portfolio asset that the rebalancing procedure can execute.

3.8.2 Rebalancing Procedure. The basic flow for a rebalancing is to first get the current total market value of the portfolio, then we can determine the *current ratios* for each of the held asset against the total market value. Then an *ideal ratios* can be determined for the whole portfolio, using the main procedure in the last section.

Once we have an overall *ideal ratios*, we can then generate the an *action sequence* of the specific steps we should take to change our portfolio ratios into that of the ideal ratio, plus or minus a pre-defined error allowance (currently set to be 1% of total portfolio value). The specific actions include:

- move assets from cold storage to crypto exchange

- buy/sell assets on exchange to achieve a desired ratio
- move assets from exchange back to cold storage for safe storage

We first define the key terms as follows, all ratios are described in terms of relative numbers in market value.

- each crypto is described by a *type* and an *amount*.
- each crypto is held on both an *exchange* (for adjustment) and *cold storage* (for long-term storage).
- **cold ceiling ratio**: ratio of upper limit on how much a crypto may be held on cold storage (e.g., 100%).
- **cold floor ratio**: ratio of a lower limit on how much a crypto should be stored on cold storage (e.g., 75%).
- **group**: a collection of cryptos that are traded together on the same exchange.
- **group limit ratio**: ratio of upper limit on how much a group's market value can be within the total portfolio.

Below are the actual steps to perform rebalancing:

- (1) Group determination
 - (a) if a given crypto already exists, no change is needed.
 - (b) if a new crypto is to be added, add to the Group with lowest market value.
- (2) Cold Storage to Exchange Transfer
 - (a) if the market value in a particular cold storage is above **cold ceiling ratio** (e.g., 85%), move to corresponding exchange so its ratio is 5% below the limit (e.g., 80%).
 - (b) if the crypto were to be removed from the portfolio, move all to the exchange.
- (3) Intra-Exchange Rebalancing
 - (a) Determine for a given crypto, how much should be increased/decreased on both cold storage and exchange according to the *ideal ratio*.
 - (b) move the most over-ratio crypto into the most under-ratio crypto (i.e., purchase the crypto whose ratio is under ideal by cryptos whose ratio is over).
 - (c) if bitcoin is not enough, transfer the over-ratio crypto to bitcoin first.
 - (d) if a crypto cannot be exchange directly, convert to bitcoin first before exchanging to targeted crypto.
- (4) Inter-Exchange Rebalancing
 - (a) at this point some exchange may hold more cryptos while others have less, adjust bitcoin first.
 - (b) convert the largest over-ratio crypto to the under-ratio crypto, then move to targeted exchange.
 - (c) if cryptos cannot be exchanged directly, convert to bitcoin first, before the exchange.
- (5) Exchange to Cold Storage Transfer
 - (a) if a given crypto exists in exchange with higher ratio than $(1 - \text{cold floor ratio})$, move it to cold storage so the crypto's ratio in cold storage is above **cold floor ratio**.
- (6) Inter-Group Rebalancing
 - (a) If a given group's market value ratio exceeds **group limit ratio**, move all to the group with the lowest market value.

Table 3: JCF Milestones

Date	Milestone
2018.01 ~ 2018.03	Formed team and launched Alpha.
2018.07	JCF Taiwan (R.O.C.) registered.
2018.10.10	Initial Token Offering (sales) begin.
2019.11	Public operations with regular dividends.
2021.01	AUM: USD 170,000, MAU: 100
2022.11 ~ future	JCF UK established for internalization.

3.9 Security

Security is of utmost importance for any financial instruments and systems, and there are potential security issues related to both human errors and system vulnerabilities.

Our basic philosophy is to reduce human errors as much as possible by automating most of the tasks in running the fund, and reduce the tasks that require human operations to:

- transfer of crypto assets held by the fund between cold storage and exchange (during rebalancing).
- the confirmation and release of regular dividends.
- upgrade of smart contracts used.

Regarding system vulnerabilities, our system architecture is divided into a backend *Portfolio Server* which normal users never see, and another frontend *User Server* that token holders interact with. The information flow is basically one-directional from the Portfolio Server to the User Server. This is designed so that the frontend user facing server only stores user and publicly available info (such as crypto public addresses). All private keys are stored at the Portfolio server and away from the public Internet (or even from the User Server). We intend to operate our Portfolio Server in a closed environment that only fund managers can access via private networks.

4 CURRENT UPDATE

We outline JCF operations into the following milestones in Table 3. As shown from our milestones, JCF has been operational since Oct. 2018 with a relatively safe investment strategy that produces dividends, which can indeed be the basis for a UBI mechanism that could be more global and transparent. The dividend payout is shown in Table 4. Some of the key fields are: assets under management (AUM), monthly active users (MAU), asset size of Dividend Pool, average monthly Dividend Yield.

5 CONCLUSIONS

Tech innovations have been the hallmark of human civilizations, it has and will continue to bring prosperity for people to no longer have to struggle to make ends meet. This vision, however, can only be realized if the progress is equally shared by all. *Universal Basic Income* may be one mechanism, yet how to redistribute wealth is a major challenge under existing mechanisms.

The rise of crypto, while possibly disruptive, may hold the promise for more efficient finance. Our proposed Joint Commonwealth Fund (JCF) and potential future funds are intended to address both wealth creation and distribution. We combine time-tested index strategy

Table 4: Average Monthly Dividend Yield for 2021 (US\$)

Date	AUM	MAU	NAV	Dividend Pool	Yield
2021/12/23	\$124,166	119	78.16	\$4,377	1.20%
2021/12/9	\$128,203	119	77.24	\$5,749	1.54%
2021/11/25	\$128,888	120	77.40	\$7,610	2.05%
2021/11/11	\$130,072	121	77.27	\$10,040	2.63%
2021/10/28	\$130,775	122	73.17	\$12,456	3.32%
2021/10/14	\$143,288	121	80.13	\$17,876	4.52%
2021/9/30	\$126,383	120	70.41	\$20,478	6.18%
2021/9/15	\$138,182	120	76.99	\$29,008	8.42%
2021/9/8	\$138,181	119	77.00	\$37,294	11.60%
2021/4/14	\$199,539	114	118.93	\$61,829	16.08%
2021/2/25	\$138,172	109	139.64	\$45,901	19.12%
2021/1/27	\$105,792	98	114.94	\$21,082	8.91%

with blockchain to realize the efficient redistribution of wealth, so that practical UBI can happen from the private sector.

It is with this hope for a more liberating society, where humanity can be freed from the burdens of laboring for a living, and engage in more creative, social, scientific or spiritual activities, that we encourage you to participate in JCF, to help humanity realize its biggest potentials, by growing wealth for all, and make basic income universal to over 1 billion people by 2040!

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