CryptoCompare Fork Policy Recommendation

CryptoCompare

2018





Contact info@cryptocompare.com

Published by CryptoCompare

CRYPTOCOMPARE.COM

20 February 2018

Contents

1	Version History	5
2	Summary	5
3	Terminology	7
3.1	Scope	7
3.2	Vocabulary	7
3.2.1	Soft Fork	7
3.2.2	Hard Fork	7
3.2.3	Chain Split/Coin Split	7
3.2.4		3
3.2.3 3.2.6	Scam Forked Coin	ז ג
3.2.7	Premine	3
3.2.8	Spin-Off Coin	3
3.2.9	Replay Attack	3
3.2.10	Two-way Replay Protection	3
3.2.11	Airdrop	?
3.2.11 4	Airdrop Claiming a Forked Coin 10	7)
3.2.11 4 4.1	Airdrop Image: Claiming a Forked Coin Image: Methods For Claiming Image: Claiming	7))
3.2.11 4 4.1 4.1.1	Airdrop 9 Claiming a Forked Coin 10 Methods For Claiming 10 Supporting Wallet or Exchange 10	?)))
3.2.11 4 4.1 4.1.1 4.1.2	Airdrop 9 Claiming a Forked Coin 10 Methods For Claiming 10 Supporting Wallet or Exchange 10 Running Fork Software 10))))
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3	Airdrop 9 Claiming a Forked Coin 10 Methods For Claiming 10 Supporting Wallet or Exchange 10 Running Fork Software 10 Send Manual Transaction 10	9))))
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10	7)))))
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11	9 0 0 0 0 0 0 0 0
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3 5	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12	7 7
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3 5 5.1	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12Policy Overview12	
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3 5 5 5.1 5.1.1	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12Policy Overview12Binance12	P D <p< td=""></p<>
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3 5 5.1 5.1.1 5.1.1 5.1.2	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12Policy Overview12Binance12Bitfinex13	
3.2.11 4 4.1.1 4.1.2 4.1.3 4.2 4.3 5 5.1 5.1.1 5.1.2 5.1.3	Airdrop10Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12Policy Overview12Binance13Bitfinex13OKEX13	
3.2.11 4 4.1 4.1.1 4.1.2 4.1.3 4.2 4.3 5 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.4	Airdrop9Claiming a Forked Coin10Methods For Claiming10Supporting Wallet or Exchange10Running Fork Software10Send Manual Transaction10Costs And Risks10Risk Mitigation11Exchange Fork Policy12Policy Overview12Binance12Bitfinex13OKEX14Coinbase13	

5.1.6 5.1.7 5.1.8 5.1.9 5.1.10 5.1.11 5.1.12 5.1.13 5.1.14 5.1.15 5.1.16 5.1.16 5.1.17 5.1.18 5.1.19 5.2	BitTrex . Kraken . Bitstamp . HitBTC . Poloniex . TrustDEX . bitFlyerFX . Gemini . Liqui . Gate.io . Bithumb . EXX . Kucoin . Exmo . Futures Trading	13 14 14 14 14 14 14 14 14 14 14 15 15 15 15
5.3	Benchmark Exchanges	15
5.3.1 5.3.2 5.3.3 5.3.4	Top Exchanges By VolumeTop Exchanges By Number of CoinsTop Exchanges By Volume Per CoinTop Tier Exchanges	15 15 15 16
6	Policy Recommendation	19
6.1	Past Fork Analysis	19
 6.2 6.2.1 6.2.2 6.2.3 6.3 	Methodology Metrics Additional Recommendation Policy For MVIS CryptoCompare Indices Upcoming Forks	19 19 20 20 20
6.3.1 6.3.2 6.3.3	Bitcoin Private Bitcoin Lunar Dogethereum	20 20 21
7	References	23

1. Version History

Version	Date	Reviewed by	Details
1	2018-02-23	Quynh Tran-Thanh, Constantine Tsavliris	Initial version

2. Summary

The goal of this document is to provide insight into coin splits by hard forks, and whether or not to consider adding a forked coin to a portfolio. This document is useful for a hedge fund manager or asset manager that handles crypto portfolios, and seeks to understand the best practices for handling hard forks, as well as their associated costs and risks.

CryptoCompare recommends a prudent approach for forked coins by investigating the policies of top exchanges and any available public data on past forked coins. First, we establish the scope and terminology of the topic, then we look at the technical process of claiming a forked coin. A methodology is offered to select benchmark exchanges that will serve as a guideline for best practice. Finally we analyze past forks and recommend a policy for considering upcoming forks.

3. Terminology

3.1 Scope

In the context of this report, a fork will be defined as a mechanism in which an underlying blockchain protocol changes such that it may split the blockchain, which may or may not happen depending on the existence or lack of consensus among miners.

We do not cover code-only forks (spin-off coins), where only the code is forked but not the blockchain history.

We do not cover airdrops in this document.

The following vocabulary will help set the grounds for our fork policy.

3.2 Vocabulary

3.2.1 Soft Fork

A soft fork occurs when the underlying protocol of a blockchain is changed, such that it continues to be backwards compatible with older versions.

This means that participants that still operate on the older blockchain protocol will still be able to validate and verify transactions on the upgraded version.

However, functionality for those that have yet to upgrade to the new protocol may be affected; for instance non-upgraded miners looking to mine new blocks on the upgraded protol may have their efforts rejected on the new network. Hence, a soft fork encourages the remaining minority of older participants to gradually upgrade to the new software.

3.2.2 Hard Fork

A hard fork occurs when a blockchain protocol is radically changed, such that it becomes incompatible with older versions. In effect, participants taking part in transactions on the old blockchain must upgrade to the new one in order to continue validating transactions. However, participants that do not upgrade may continue to support and validate transactions on the older blockchain protocol separately.

The result of this is that a blockchain splits into two - hence the name "hard fork". If there are nodes permanently supporting the new chain, then the two chains will co-exist.

Users that once held cryptocurrency on an older blockchain before the protocol change at a pre-specified blockchain length will now also hold an amount of new cryptocurrency on the altered blockchain. This new cryptocurrency has essentially been derived from an older cryptocurrency as well as its associated blockchain's transaction history and is known as a "forked coin".

3.2.3 Chain Split/Coin Split

Split of a blockchain after a hard fork, that results in the creation of a new coin that shares the history of the old coin.

3.2.4 Planned Hard Fork

A planned hard fork is a type of hard fork that occurs as a result of a scheduled blockchain protocol upgrade based on a project's pre-stated development plan. In this case, the older protocol will cease to be supported if all goes to plan and the fork will not involve the creation of a separate chain.

3.2.5 Contentious Hard Fork

It occurs after a longer period of debate, discussion and disagreement within the cryptocurrency community on whether to formally implement a hard fork and the associated protocol changes. Despite the disagreement, some within the community decide to implement a hard fork anyway, leading to what can be defined as a "contentious hard fork". Examples of contentious hard forks are Ethereum Classic and Bitcoin Cash.

3.2.6 Scam Forked Coin

These coins will represent the focus of this report, and are particular types of hard forked coins that continue to materialise as a result of an underlying protocol and transaction history being duplicated and altered. The major distinction between this type of fork and a planned or contentious hard fork, is that it tends to occur under the radar and with a lack or absence of any significant community consensus or discussion. The main motivation for the creation of these forks is to re-use the brand of well established coins to gain publicity, with a premine usually in place.

3.2.7 Premine

Before releasing a blockchain to the public, developers decide to start running nodes to 'premine' coins up to a percentage of the total supply. This is often justified by most project teams, with a plan to cover future development and operational costs.

3.2.8 Spin-Off Coin

A spin-off coin is derived from a specific blockchain's original protocol. However, only the blockchain's code is copied and altered rather than its is chain history, so it is not technically classified as a forked coin in our context. Using an altered blockchain code with unique characteristics, a brand new blockchain is created and begins with no prior transaction history.

3.2.9 Replay Attack

When a hard fork occurs, the original blockchain protocol as well as its transaction history is duplicated. As a result, a user will possess both a quantity of the original blockchain's coins as well as a quantity of the new blockchain's coins. However, in the absence of "replay protection", transactions involving the transfer of the original blockchain's coins are valid on both chains. That is, if one user intends to transfer one original coin to another user, this transaction is also valid on the new coin's blockchain. This transaction is now public, which exposes a security vulnerability in which an attacker may fraudulently or maliciously "replay" this same transaction on the new forked blockchain or vice versa in the case of a user transferring coins out of the new altered blockchain.

3.2.10 Two-way Replay Protection

In order to protect against replay attacks, the blockchain protocol is able to implement 2-way replay protection that eliminates the possibility of any duplicate transactions arising on both blockchains. This means that transactions from the original chain are never valid on the new altered chain after the hard fork occurs and vice-versa.

3.2.11 Airdrop

An "airdrop" occurs when a blockchain project distributes free tokens or coins to the cryptocurrency community. In order to obtain these, often the only requirement is for someone to already own coins from the relevant blockchain (such as bitcoin or etherium) stored on their wallet. Airdrops may require social media posts in favour of the project in question, or directly contacting a member of the relevant project team on a designated forum to claim any free coins.

4. Claiming a Forked Coin

4.1 Methods For Claiming

In order to claim a forked coin, one must have had cryptocurrency stored on the original blockchain. Secondly, the currency must be present before a "snapshot" of the specific original cryptocurrency's blockchain is taken at some pre-specified time or "block height". Here, a copy of the exact ledger containing all existing coin transactions and accounts will be recorded and used to designate new forked coins to those who held that specific cryptocurrency originally. There is then a waiting time before the new forked chain goes live, and once this happens any new forked coins can then be claimed in various ways.

4.1.1 Supporting Wallet or Exchange

If the fork is supported by a wallet or exchange, one can transfer funds to one of these service providers before the snapshot is being taken. This involves handing over a private key for the service provider, so this is considered as a risky option. In some cases the forked coins are only available for the user after a long period of time (weeks to months).

4.1.2 Running Fork Software

If the source code of the fork blockchain is public, one can download and run the forked software locally and use the provided interface to get hold of the forked coins. This option is also viewed as risky, as the software can contain malware that can steal funds or private information.

4.1.3 Send Manual Transaction

The safest but technically most complicated way to obtain a forked coin is to connect to the forked coin's network and send a signed transaction manually. This requires the knowledge of signing a transaction in a format that is compatible with the new network.

4.2 Costs And Risks

In the case of bitcoin, all transactions include by default a network transaction fee. The amount of this fee depends on the size of the transaction in bytes as determined by number of inputs and outputs, not the amount of money being sent. This will vary by wallet as well as required transaction time. The reason for this being a relevant cost is that for safety reasons it is often advised to empty the wallet of all the cryptocurrency contained on the original forked blockchain in the case of any attempt or attack that may result from exposing private key information required when claiming a hard forked coin.

One of the major risks associated with claiming a hard forked coin is that financial privacy can be significantly harmed by this process, given that data of any Bitcoin holdings may be revealed to various networks, exchanges, and services you may use in the process. The obvious implications are that one may be exposed to attacks and fraudulent activity. For instance, private keys are used to configure a wallet to claim any new forked coins. There have been cases of fraudulent wallets or

4.3 Risk Mitigation

websites that accept users' private keys (required to transfer funds), only to steal any cryptocurrency within those accounts.

Furthermore, sending transactions after a forked coin has been claimed also exposes various users to the possibility of replay attacks in cases where an altered blockchain does not have Two-Way Replay Protection in place.

4.3 Risk Mitigation

The general guidelines for mitigating risk are the following:

- 1. **Transfer funds.** Before exposing existing private keys to new wallets or exchanges, it is often necessary to empty the associated wallets containing any cryptocurrency holdings before claiming a forked coin. In the case of a security breach, this eliminates any possibility for holdings on the original wallet to be stolen.
- 2. **Trusted Wallets/Exchanges.** Only use trusted wallets that support any relevant forked coins when exposing private key information. These trusted wallets often have stricter policies in place that help to mitigate the risks of a breach. Furthermore, be weary of installing and running certain software when claiming forked coins a malicious piece of software may use your old private keys to steal any other unclaimed forks.
- 3. **Cooling period.** Wait until the new live blockchain is stable and protected for a designated period before claiming any new forked coins. A forked blockchain may not have replay protection in place, which could result in a loss of cryptocurrency due to unintended transactions.

5. Exchange Fork Policy

5.1 Policy Overview

Among the top 20 cryptocurrency exchanges by volume, policies on hard forks tend to be relatively homogeneous. Most have strict policies in place to protect existing clients, and by default, forked coins are not supported. Nonetheless, most exchanges have chosen to list Bitcoin Cash (BCH), which for some, entailed an extended review process of up to 5 months before being listed. Another well known forked coin, Bitcoin Gold (BTG), has been listed by less than half of the top exchanges, followed by Bitcoin Diamond (BCD). Other recent hard forks such as Bitcoin God (GOD) or Bitcoin Atom (BCA) have only been listed by a handful of the top exchanges, with these coins often being a very niche offering. It is often these recent niche forked coins that pose the most danger to investors and exchanges and hence merit the most caution.

Although top exchanges tend to differ on the explicit conditions they impose for listing/supporting any hard fork, they share common ground on their stance on hard fork security, and normally require that hard forks have strong replay protection in place before any consideration. Other conditions that appear across various exchanges include the requirement that forked blockchains are stable, usable and offer significant value to their respective clients before being listed. Some highlight the need for the underlying technology behind any forked chain to be integrated, creative and contribute to technological innovation and value. Premining, as mentioned, poses a risk and is taken into account when making listing considerations for any coin. Some exchanges also consider the current market value of a forked coin, as well as the scale of demand for a particular coin from their current users.

Among the top 20 exchanges by volume, the following conditions arise with respect to hard fork policies:

- Default positions are against forked coins unless otherwise decided
- Forked blockchains must be usable, stable and secure
- The underlying technology behind the forked coin must contribute to value
- Fork project must have public developers
- The code must be open source
- There is a testnet available before launch
- Forked coin has a sizeable community
- Size of the forked coin network much reach critical mass
- Strong two way replay protection must be in place
- A "clean break" meaning that the new chain cannot be wiped out by the original chain
- Official client software is launched before the hard fork is activated, which needs to pass open beta test testing and assessment

5.1.1 Binance

Listed Forked Coins: Bitcoin Cash (BCC), Bitcoin Gold (BTG), Bitcoin Diamond (BCD)

Default position for all of their coins is "no listing", however they have generally been supportive of past bitcoin forks. After the exchange deems the forked blockchain and wallet as usable and stable pending the same strict listing review process for any other coin or token, they will allow up

5.1 Policy Overview

to 7 days for users to withdraw their forked coins. They reserve the right to change their stance on any specific forks as they deem appropriate.

5.1.2 Bitfinex

Listed Forked Coins: Bitcoin Cash (BCC), Bitcoin Gold (BTG) The exchange may consider listing a hard fork Any hard fork requires adequate replay protection

5.1.3 OKEX

Listed Forked Coins: Bitcoin Cash (BCH),Bitcoin Gold (BTG), Bitcoin Diamond (BCD), Super Bitcoin (SBTC), BitcoinX (BTX), United Bitcoin (UBTC)

Their general policy is supportive of forked coins under certain conditions. Relevant considerations are the forked coin's safety and stability, as well as the attractiveness of its underlying technology, the strength of its development team, its market liquidity and compliance characteristics.

5.1.4 Coinbase

Listed Forked Coins: Bitcoin Cash (BCH)

Coinbase emphasises safety and security as their top priority, their default position being that they support only one version of a digital currency. Support for certain Bitcoin forks has been considered on the basis of factors such as size of the network, market value and customer demand. Bitcoin Cash (BCH) went live on August 1st 2017, and was eventually implemented after a lengthy review process of 5 months. No support at this time for Bitcoin Gold given its lack of public code availability, which represents a significant security risk. They require reassurance that fork networks are secure, stable, sizeable and valuable.

5.1.5 HuobiPro

Listed Forked Coins: Bitcoin Cash (BCH),Bitcoin Gold (BTG), Bitcoin Diamond (BCD), Super Bitcoin (SBTC), BitcoinX (BCX)

Stance towards forked coins is supportive yet conditional on the basis of several considerations. They support hard forks that are based on an integrated and creative blockchain. Do not support random or unexpected forks or premining with no creation or improvement of the blockchain. They claim this doesn't bring in value and may lead to a splintered community, a messy industry and customer confusion. Hard fork program team must inform Huobi.pro in advance and receive a clear response from Huobi.pro before any hard fork is considered. Require strong two-way replay protection, a "clean break", as well as a modification to the block format, such that all wallets (including light clients) are required to upgrade to follow the hard forked chain. Require that official client software is launched before the hard fork is activated, which needs to pass an open beta test and assessment

5.1.6 BitTrex

Listed Forked Coins: Bitcoin Cash (BCC)

Default position is to not support forks. May decide to support a forked coin on the basis of the existence of a development team and if they have contacted Bittrex previously. They also consider coins on the basis of whether a coin has public developers, a Testnet, or its code is available publicly. They take into account whether there is a premine for a particular coin.

5.1.7 Kraken

Listed Forked Coins: Bitcoin Cash (BCH)

Does not support forked coins as a default position.

5.1.8 Bitstamp

Listed Forked Coins: Bitcoin Cash (BCH)

Does not support forked coins as a default position. After careful consideration, they may accept a forked coin on the basis of volume, the security of the forked blockchain, and safety.

5.1.9 HitBTC

Listed Forked Coins: Bitcoin Cash (BCH), BitcoinGold (BTG), SegWit2x (B2X) SuperBitcoin (SBTC)

Does not support forked coins as a default position, but supportive if conditions are met.

5.1.10 Poloniex

Listed Forked Coins: Bitcoin Cash (BCH), Bitcoin Plus (XBC), Bitcoin Dark (BTCD)

Does not support forked coins as a default position. Forks must have replay protection as a minimum, security focused.

5.1.11 TrustDEX

Listed Forked Coins: Bitcoin Cash (BCH)

No policy information found

5.1.12 bitFlyerFX

Listed Forked Coins: Unclear

Splits must be permanent and secure, as well as solid in terms of legality and compliance, to support both BTC and BTG.

5.1.13 Gemini

Listed Forked Coins: Bitcoin Cash (BCH)

Does not support forked coins as a default position. Following a technical evaluation of Bitcoin Gold, they determined that it is still early in its software development phase. As a result there is technically no way they could support Bitcoin Gold at this point, even if they wanted to. If Bitcoin Gold ever becomes a viable cryptocurrency, they might consider offering Bitcoin Gold withdrawal capabilities, similar to what they have done for Bitcoin Cash (BCH) and Ethereum Classic (ETC).

5.1.14 Liqui

Listed Forked Coins: Bitcoin Cash (BCH)

Pending the release of BCH, they monitored network stability and enabled trading and deposits when they believed it was deemed safe to do so.

5.1.15 Gate.io

Listed Forked Coins: Bitcoin Cash (BCH), Bitcoin Gold (BTG), Bitcoin Diamond (BCD), SuperBitcoin (SBTC), BitcoinGod (GOD), BitcoinX (BCX), Bitcoin Faith (BTF)

Stated that they may open trading for hard forks with stable operations, also drawing attention from the majority of their users.

5.1.16 Bithumb

Listed Forked Coins: Bitcoin Cash (BCH), Bitcoin Gold (BTG)

Listing of forks depends on the circumstances of the forked coin networks

5.1.17 EXX

Listed Forked Coins: Bitcoin Cash (BCC), Bitcoin Diamond (BCD), Super Bitcoin (SBTC), United Bitcoin (UBTC), Lighting Bitcoin (LBTC)

No policy information found

5.1.18 Kucoin

Listed Forked Coins: Bitcoin Cash (BCH), Bitcoin Gold (BTG), Bitcoin Diamond (BCD) Will support and credit all forks that provide valid access to 'blockchain backend'

5.1.19 Exmo

Listed Forked Coins: Bitcoin Cash (BCH) Does not support forked coins as a default position. Hard forks must go through the necessary security verifications There should be access to hard fork blockchain transcripts

5.2 Futures Trading

Some exchanges such as Yobit and HitBTC offer futures trading of forked coins before the official fork occurs. These are cash settled contracts, and bought futures coins are not transferable. Furthermore, these exchanges usually promise to deliver the coin once they are available.

Futures trading is a good tool for price discovery, however the fact that forked coins are only often listed on a single exchange means that there is a high risk of market manipulation. The fork project may effectively have an incentive to trade with itself to pump up the price artificially.

5.3 Benchmark Exchanges

The aim of this section is to define a methodology for selecting the "Benchmark Exchanges". Benchmark exchanges are markets where the acceptance of a forked coin will be considered as a policy to follow.

In order to select the top tier exchanges, we define the following metrics: 24 hour total volume on exchange, coins traded.

5.3.1 Top Exchanges By Volume

Total trading volume measures the market share and popularity of an exchange. The sample toplist of the exchanges by volume can be seen in Table 5.1.

5.3.2 Top Exchanges By Number of Coins

Number of traded coins indicate the difference in business model across different exchanges. Exchanges with a high number of listed coins generate revenue by listing new coins, whereas exchanges with a lower number of coins operate on trading fees. This difference in business model, and hence business incentives may highlight a potential difference in fork acceptance across exchanges. Table 5.2 shows the exchanges that most possibly operate on the business model of listing coins.

5.3.3 Top Exchanges By Volume Per Coin

The combination of the two metrics show the real market impact of an exchange: a high volume and low coin exchange is more dominant than a high volume and high coin exchange. For example Binance, which is the leader in terms of volume, is now only number 9, as it lists a high number of coins. In contrast, Coinbase is the number 1, despite the fact that it only trades 5 coins as can be seen in Table 5.3.

Exchange	24h Volume in USD
Binance	1,704,743,552
Bitfinex	1,151,177,368
OKEX	841,138,714
Coinbase	673,675,798
HuobiPro	619,013,745
BitTrex	449,444,786
Kraken	406,762,923
Bitstamp	315,410,068
HitBTC	303,276,042
Poloniex	275,005,691
TrustDEX	217,595,988
bitFlyerFX	153,767,061
Gemini	100,784,204
Liqui	79,462,883

Table 5.1: Top Exchanges By Volume

5.3.4 Top Tier Exchanges

The tier level will be defined by the combination of metrics above, where we set a treshold for Volume and Trading Coins described in Table 5.4. Based on this tier segmentation, we can look at Tier 1 and Tier 2 exchanges in Table 5.5.

The Tier1 and Tier2 will be considered for benchmarking.

Exchange	Trading Coins
EtherDelta	2046
Yobit	1081
Cryptopia	719
CCEX	627
BitTrex	478
HitBTC	276
LiveCoin	206
Poloniex	173
WavesDEX	158
OKEX	132
Binance	116
Gateio	108
Kucoin	101
Tidex	95

Table 5.2:	Тор	Exchanges	By	Trading	Coins
14010 0.21	TOP	Enternanges	$\boldsymbol{\nu}_{j}$	maanig	Como

Exchange	Average 24h Volume Per Coin
Coinbase	168,418,949
bitFlyerFX	153,767,061
TrustDEX	54,398,997
Bitstamp	52,568,345
Gemini	50,392,102
Bitfinex	25,025,595
itBit	22,874,191
Kraken	21,408,575
Binance	14,696,065
bitFlyer	11,774,121
LocalBitcoins	10,122,715
HuobiPro	8,253,517
Luno	7,859,965
OKEX	6,372,263

Table 5.3: Top Exchanges By Volume Per Coin

Tier Level	Volume	Trading Coins
Tier 1	>= 50M USD	< 50
Tier 2	>= 50M USD	>= 50
Tier 3	< 50M USD	>= 50
Tier 4	< 50M USD	< 50

Table 5.4: Tier Level Segmentation

Exchange	Tier Level
Coinbase	Tier 1
bitFlyerFX	Tier 1
TrustDEX	Tier 1
Bitstamp	Tier 1
Gemini	Tier 1
Bitfinex	Tier 1
Kraken	Tier 1
Bithumb	Tier 1
Binance	Tier 2
HuobiPro	Tier 2
OKEX	Tier 2
Poloniex	Tier 2
HitBTC	Tier 2
Liqui	Tier 2
BitTrex	Tier 2
Gateio	Tier 2

Table 5.5: Top Tier Exchanges

6. Policy Recommendation

6.1 Past Fork Analysis

As described in the previous chapter, Bitcoin Cash and Bitcoin Gold were the more accepted forks among exchanges. In contrast, recent hard forked coins often lack legitimacy, as indicated by the common term "scam coins". These are typically developed under the radar by developers looking to quickly generate easy money, usually through what is known as "premining". For this reason, extended caution is required when considering any forked coins that involve premining, which allows developers to mine a percentage of the total supply of a forked coin before it is listed on an exchange.This premined cryptocurrency is claimed to be allocated to project development and growth funding; however, this may not be the case and there is the risk that once a hard forked coin generates speculative value on an exchange, the developers then sell their reserve of premined coins and vanish with a hefty profit. The coin then crashes and any unsuspecting investors quickly lose their original investments.

The major concern with regards to any hard fork is centered upon network security, with most exchanges offering their support and/or listing for a hard fork only after a series of stringent minimum conditions are met over an extended review process. Often, hard forks are open to replay attacks in the absence of adequate protection, and struggle with issues related to network stability given that it often requires significant effort to effectively maintain and manage exchange networks.

Another threat is the fact that the entry barrier for new forks is low. There are services offering a github fork of an original coin, as well as a full design and website, all inclusive for 0.01 BTC. Frequently, there are no public developers for fork projects, or even no open source code. Fork projects then approach exchanges that are open for listing new coins, regardless of whether the forked coin currently exists or not (futures market).

6.2 Methodology

6.2.1 Metrics

When considering forks, we look at the following metrics:

- Exchanges accepting: We follow our top tier exchanges as best practices.
- Twitter Followers: Measures the community support level of the project.
- **Public Developer**: Indicates that there are people that can be held accountable for any liability.
- Open source code: Makes code auditing and vulnerability checks possible
- **Premine**: Transparency in terms of the total supply of the new coin and intentions of the project

In the ideal scenario, a fork project must meet all the following requirements: accepted in a top tier exchange, sizeable community, public developers and open source, no (or at least transparent) premine.

Given these metrics, out of the past Bitcoin forks only Bitcoin Cash, Bitcoin Gold and Super Bitcoin might be considered as potential forked coins to claim.

6.2.2 Additional Recommendation

In terms of the time between the announcement of the fork and the activation of the fork, we recommend a time span of at least 6 months - this demonstrates the seriousness and legitimacy of the project, given that the necessary testnet launch, testing period and community building needs to take place.

6.2.3 Policy For MVIS CryptoCompare Indices

When adding a forked coin to an MVIS CryptoCompare Index, the following risks arise:

- Price manipulation using premined coins
- Arbitrary total supply of a coin will allocate substantial weight to the new coin in the portfolio
- Damage to reputation in the case of adding a scam coin, as it might be viewed as an endorsement

For a fund manager who tracks an MVIS CryptoCompare Index the following risks arise:

- Loss of funds on the new chain
- Loss of funds on the old chain
- Loss of private key
- Loss of private information
- Transaction costs
- Not being able to track the index due to unsuccessful trial of claiming the forked coin
- Not being able to sell the forked coin

Therefore, we recommend a strict policy of all conditions being met, and a further testing period to be put in place. These recommendations are only guidelines and each forked coin should be considered on an individual basis.

6.3 Upcoming Forks

6.3.1 Bitcoin Private

- Blockchain base: Bitcoin/Zclassic
- Fork date: around 2nd March 2018
- Block height: N/A
- Exchanges: N/A
- Twitter Followers: 35k
- Puplic Developers: Yes
- Open Soure Code: None
- Premine: No

Recommendation: Not enough information to be considered.

6.3.2 Bitcoin Lunar

- Blockchain base: Bitcoin
- Fork date: around April 2018
- Block height: N/A
- Exchanges: N/A
- Twitter Followers: 8
- Puplic Developers: No
- Open Soure Code: None
- Premine: N/A

Recommendation: Not enough information to be considered.

6.3.3 Dogethereum

- Blockchain base: DogeCoin
- Fork date: around Fall 2018
- Block height: N/A
- Exchanges: N/A
- Twitter Followers: 140
- Puplic Developers: N/A
- Open Soure Code: None
- Premine: N/A

Recommendation: Not enough information to be considered.

Fork	Fork Date	Block Height	Exchanges At Fork	Twitter	Public Dev.	Open Source	Premine
Bitcoin Cash	1/8/2017	478558	10+ exchanges including major ones	93,400	Multiple teams	Multiple	No
Bitcoin Clashic	1/8/2017	478558	Bisq	3,081	Multiple teams	Yes	N/A
Bitcoin Gold	24/10/2017	491407	Bitfinex, HitBTC, Binance, Bittrex, Yobit, Gate.io, Korbit	65,100	Public and anony- mous	Yes	100,000
Bitcoin Diamond	24/11/2017	495866	Binance, OKEx, Gate.io, Yobit (Futures)	26,400	Anonymous	N/A	10%
BitcoinX	12/12/2017	498888	Aex	5,202	Anonymous	N/A	N/A
Bitcoin Hot	12/12/2017	498777	Yobit (Futures)	6,141	Yes	Yes	1%
UnitedBitcoin	12/12/2017	498777	EXX (Futures)	1,473	Yes	Yes	N/A
Super Bitcoin	12/12/2017	498888	Binance, Gate.io, Yobit(Futures), HitBTC(Futures)	7,537	Yes	Yes	210,000
Oil Bitcoin	12/12/2017	498888	N/A	352	N/A	N/A	N/A
Bitcoin World	17/12/2017	499777	N/A	338	Anonymous	N/A	N/A
Lightning Bit- coin	19/12/2017	499999	Yobit	7,029	Yes	N/A	N/A
Bitcoin Top	27/12/2017	501118	Yobit	113	Anonymous	N/A	N/A
Bitcoin God	27/12/2017	501225	Gateio, Yobit (Fu- tures)	5,534	Anonymous.	N/A	No
Bitcoin File	27/12/2017	501225	Gateio	164	Anonymous.	N/A	N/A
Bitcoin Cash Plus	28/12/2017	501407	Yobit (Futures)	9,641	N/A	N/A	N/A
Bitcoin SegWit 2X	28/12/2017	501451	Yobit (Futures) HitBTC(Futures) Exrates(futures)	7,778	Yes	Yes	2 Million
Bitcoin Pizza	31/12/2017	501888	N/A	2,347	Public and anony- mous	Yes	N/A
Bitcoin Ore	31/12/2017	501949	N/A	195	Yes	N/A	N/A
Bitcoin Candy	13/1/2018	512666	N/A	113	Yes	Yes	1%
Bitcoin Inter- est	20/1/2018	505083	N/A	10,100	Yes	N/A	1 Million
Bitcoin Atom	24/1/2018	505888	Yobit (Futures)	2,292	N/A	Yes	N/A

Table 6.1: Past Bitcoin Forks

7. References

Airdropalert.com. 2018. . [ONLINE] Url: https://airdropalert.com/. [Accessed 23 February 2018]

Aziz. 2017. *Guide to Forks: Everything You Need to Know About Forks, Hard Fork and Soft Fork.* [ONLINE] Url: https://masterthecrypto.com/guide-to-forks-hard-fork-soft-fork/. [Accessed 23 February 2018]

Binance. 2017. *Binance's Policy On Any Future Bitcoin Forks*. [ONLINE] Url: https://support.binance.com/hc/en-us/articles/115002793151-Binance-s-Policy-On-Any-Future-Bitcoin-Forks. [Accessed 23 February 2018]

Bitcoin Private Community, Jacob Brutman Ph.D., Jon Layton, Christopher Sulmone, Giuseppe Stuto, Geoff Hopkins, Rhett Creighton. 2018. *Bitcoin Private Whitepaper*. [ONLINE] Url: https://btcprivate.org/whitepaper.pdf. [Accessed 23 February 2018]

BITCOIN.COM. 2017. *Transaction fees*. [ONLINE] Url: https://wallet.enchanthq.com/article/101/transaction-fees. [Accessed 23 February 2018]

bitcoinlunar. 2018. *Bitcoin Lunar (BCL)*. [ONLINE] Url: http://bitcoinlunar.org/. [Accessed 23 February 2018]

Bitfinex. 2017. *Statement on Potential Bitcoin Hardfork Event*. [ONLINE] Url: https://www.bitfinex.com/bitcoin_hardfork_statement. [Accessed 23 February 2018]

Bitstamp. 2017. *BITCOIN HARD FORK: OUR POSITION*. [ONLINE] Url: https://www.bitstamp.net/article/bitcoin-hard-fork-our-position/. [Accessed 23 February 2018]

Cameron Winklevoss. 2017. Upcoming Bitcoin Hard Fork: Modified Exchange Operations. [ONLINE]

Url: https://gemini.com/blog/upcoming-bitcoin-hard-fork-modified-exchange-operations/. [Accessed 23 February 2018]

Coinbase. 2017. *Bitcoin Gold FAQ*. [ONLINE] Url: https://support.coinbase.com/customer/portal/articles/2892196-bitcoin-gold-faq. [Accessed 23 February 2018]

Coinbase. 2017. *Bitcoin Cash FAQ*. [ONLINE] Url: https://support.coinbase.com/customer/portal/articles/2911542-bitcoin-cash-faq. [Accessed 23 February 2018]

Cryptocurrency Facts. 2017. How to Get "Forked Coins" From Bitcoin Forks. [ONLINE]

Url: https://cryptocurrencyfacts.com/how-to-get-forked-coins-from-bitcoin-forks/. [Accessed 23 February 2018]

Exmo. 2017. *EXMO official statement on Bitcoin Gold hard fork*. [ONLINE] Url: https://exmo.com/en/news_view?id=1914. [Accessed 23 February 2018]

gate.io. 2017. *About Coins split from BTC Fork*. [ONLINE] Url: https://gate.io/article/16282. [Accessed 23 February 2018]

gate.io. 2017. *BCX is listed on gate.io*. [ONLINE] Url: https://gate.io/article/16305. [Accessed 23 February 2018]

gate.io. 2017. *SBTC GOD is listed on gate.io*. [ONLINE] Url: https://gate.io/article/16304. [Accessed 23 February 2018]

http://bithumb.cafe. 2017. *Bitcoin upper segment related guidance*. [ONLINE] Url: http://bithumb.cafe/archives/9288. [Accessed 23 February 2018]

Huobi.pro. 2017. Regarding Recent Bitcoin Hard Fork (BTG and BCD, etc.): Huobi.pro's Position. [ONLINE] Url: https://www.huobipro.com/notice_detail/?id=704. [Accessed 23 February 2018]

Jimmy Song. 2017. *How Segwit2x Replay Protection Works*. [ONLINE] Url: https://bitcointechtalk.com/how-segwit2x-replay-protection-works-1a5e41767103. [Accessed 23 February 2018]

Kraken. 2017. *General statement on forks (Bitcoin Gold (BTG), etc.)*. [ONLINE] Url: https://support.kraken.com/hc/en-us/articles/115013895208-General-statement-on-forks-Bitcoin-Gold-BTG-etc-. [Accessed 23 February 2018]

Kucoin. 2017. Annoucement regarding the Bitcoin Fork and permanent support for all forked tokens. [ONLINE] Url: https://news.kucoin.com/en/annoucement-regarding-the-bitcoin-fork-and-permanent-support-for-all-forked-tokens/. [Accessed 23 February 2018]

Midori Kanemitsu. 2017. Policy on Bitcoin Gold-related chain split in Bitcoin blockchain. [ON-LINE]

Url: https://bitflyer.jp/pub/announcement-regarding-bitcoin-gold-fork-en.pdf. [Accessed 23 February 2018]

OKEx. 2017. *How OKEx is preparing for the potential Bitcoin forks*. [ONLINE] Url: https://blog.okex.com/2017/07/17/how-okex-is-preparing-for-the-potential-bitcoin-forks/. [Accessed 23 February 2018]

Poloniex. 2017. *OUR POSITION ON THE POSSIBLE HARD FORK*. [ONLINE] Url: https://poloniex.com/press-releases/2017.03.17-Hard-Fork/. [Accessed 23 February 2018]

Ryan. 2017. *Claims, Stakes, Promotions, Giveaways, Forks and Airdrops*. [ONLINE] Url: https://support.bittrex.com/hc/en-us/articles/115001919932-Claims-Stakes-Promotions-Giveaways-

Forks-and-Airdrops. [Accessed 23 February 2018]

Steven Hay. 2018. *How to Profit and Claim Bitcoin Forks in 2018 – The Ultimate Guide*. [ONLINE] Url: https://99bitcoins.com/how-to-claim-bitcoin-forks-guide/. [Accessed 23 February 2018]

Twitter (@Liqui_Exchange). 2017. *Liqui Statement on Bitcoin Cash [BCC]*. [ONLINE] Url: https://twitter.com/Liqui_Exchange/status/891638228888977408. [Accessed 23 February 2018]

Wilma Woo. 2018. DOGECOIN HARD FORKS TO 'DOGETHEREUM' LATER IN 2018. [ON-LINE]

Url: http://bitcoinist.com/dogecoin-hard-fork-dogethereum-2018/. [Accessed 23 February 2018]