

Agenda for the Oversight Committee meeting for BRR and BRTI to be held on 15th September 2017.

Agenda:

1. Extension of OC
2. Update on Performance of BRR
3. Discussion of Hard Fork Policy
4. Replicability of BRR
5. Analysis of CE's and potential inclusion of additional CE's
6. AOB

Minutes of the Oversight Committee meeting for BRR and BRTI held via conference call on 15th September 2017.

Formalities:

- Attendance

Name	Role	Attendance
Mr Gavin Lee – CME	Chair	X
Ms Payal Lakhani – CME	Member	On phone
Mr Timo Schlaefel – Crypto Facilities Ltd	Member	On phone
Mr Andreas Antonopoulos – Independent Consultant	Member	On phone
Mr Michael Moro – Genesis Global Trading	Member	On phone
Mr William Knottenbelt – Imperial College London	Member	On phone
Mr Max Boonen – B2C2	Member	On phone
Mr Ryan Pierce – CME	Invited guest	On phone

- Quorum
 - o Quorum met – meeting began at 16:00 London time on 15 September 2017.

1. Extension of OC

Further to the discussion in the last Oversight Committee meeting where the composition of the current panel was assessed and a subsequent discussion to extend the committee and knowledge base was made; two candidates were identified for membership on the Oversight Committee from the list of names put forth. Confirmation from the Oversight Committee was received to approach:

- Max Boonen from B2C2. B2C2 has significant trading experience on bitcoin spot exchanges. Mr. Boonen's input on topics such as replicability / exchange behaviour would therefore be beneficial.
 - o Mr. Boonen has accepted the invitation to join the OC and returned all necessary documentation.
 - o All members of the OC confirm they supported the appointment.
 - o Mr. Boonen joined the call today
- The other candidate declined our offer.
- Conflicts of Interest
 - o Other than the conflicts of interest already registered, no further conflicts were raised.

2. Update on Performance of the BRR

- No suspicious activity to note for the period 01 June – 15 September 2017.
- To date BRR has been calculated 349 times, with no issues to report.
- Current CE's are Bitstamp, GDAX, Itbit and Kraken.

- Bitfinex and OKcoin.com were removed from the BRR in April 2017 due to transfer restrictions. These transfer restrictions currently persist.
- Given recent trading volumes, OKcoin.com may not be eligible for re-inclusion even in the absence of transfer restrictions given the required minimum volume contribution of 3%.
- The BRR currently represents approximately 45% of the global BTC/USD trading volume.
- Bitfinex accounts for approx. 40% of the BTC/USD trading volume, but are not a current CE due to the transfer restriction mentioned above.
- The Bitcoin Cash (BCH) fork happened on August 1st. The BRR did not and will not include the BCH fork as this is not the original chain that the BRR was designed to track. The OC agreed that this was the right decision.
- No additional exchanges have approached CF or CME with an application to become a CE, nor were any exchanges suggested for inclusion by a member of the public.

3. Discussion of Hard Fork policy

A discussion was had on the following risks:

- Following a hard fork, it may be difficult to determine if the fork is contentious.
- If the fork is contentious, it may be difficult to determine whether both resulting tokens have value.
- A token may have value, but may be thinly traded, be traded at significantly different prices on multiple exchanges due to limited or non-existent arbitrage, or be traded primarily relative to another virtual currency (as opposed to USD).
- A token may be traded (only) on exchanges other than the CE's.
- There may be an extended period during which prices for a token are not available.
- Prices for a token may be unavailable during a settlement date of a financial contract.
- A token deemed non-monetarily significant might become monetarily significant later.
- Transfer restrictions may be imposed on a token.

4. Replicability of BRR

Discussion of the following risks:

- a) use of volume-weighted medians as opposed to volume-weighted averages with respect to manipulation resistance and replicability
- b) complexity of the BRR calculation methodology

- The BRR has been designed with the primary objective of manipulation resistance and the secondary objective of replicability.
- There tends to be a trade-off between manipulation resistance and replicability.
- The volume-weighted median is well suited to protect against outlier trades and divergence between the price levels across CE's.
- A volume-weighted average would result in lower manipulation resistance while not being completely replicable either as volume is not known ex ante.
- A time-weighted average could be replicable most closely.
- The calculation methodology follows two simple steps and can therefore not be considered overly complex.
- A simple time-weighted average based replication strategy of the BRR results in an average daily tracking error of 14bps. A more sophisticated replication strategy is expected to achieve a lower tracking error.
- The OC concluded that the trade-off between manipulation resistance and replicability, as well as the complexity of the calculation methodology of the BRR are adequate.

5. Analysis of CE's and potential inclusion of additional CE's

- One exchange's volume is significant and other eligibility criteria seem to be fulfilled

- In August 2017, an inclusion of this exchange would have increased the BTC:USD spot trading volume represented by the BRR from 45% to 59%
- The OC voted extend an invitation to this exchange to be included in the BRR.
- At this time, no other exchanges have been identified for possible inclusion in the BRR.

6. AOB

- None

Actions

- Circulate revised forking policy document for comments
- The meeting was brought to a close at 17:00 London time.
- The next oversight meeting will be scheduled for early December 2017.