BIT FIX – The Bitcoin Benchmark.

I.   SUMMARY

Bitcoin is an electronic digital currency which exists on a Blockchain, a distributed ledger computer system on millions of computers around the world[1]. Transactions are 'verified' by 'mining' which prevents fraud, double spending, and electronic re-verification[2]. If one wants to buy Bitcoin, one must go to a venue that will exchange fiat currency for Bitcoin or other Digital Currency[3]. Bitcoin markets are unregulated and decentralized. For this reason, Bitcoin requires a Benchmark or "FIX" more than any other market. However, unlike other markets that are offered by regulated financial institutions, Bitcoin is traded in a plethora of markets including but not limited to peer to peer[4], OTC[5], unregulated 'exchanges'[6], and semi-regulated venues such as "Money Transmitters[7]" like Coinbase, and margin trading platforms. Recently, the SEC denied a proposed Bitcoin ETP based primarily on, among other factors, an inability for the proposers to demonstrate a means by which fraud and manipulation of the Bitcoin – ETP price could be prevented[8].

II.   TOTAL CRYPTOS BACKGROUND

TotalCryptos.com is a data engine that collects Bitcoin and other Digital Currency data from more than 100+ data sources, including all listed above and more.[9] Each trading day, which is every day of the calendar year, streaming prices are recorded to a data engine. Prices are analyzed and combined using data processing and statistical tools to create an average "Total Cryptos" price, which resembles a market index. But we need to be clear what this price is because Bitcoin is fundamentally different than other markets. As Bitcoin is traded on mixed venues, there is no

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[1] https://en.wikipedia.org/wiki/Bitcoin Bitcoin (Ƀ) is a cryptocurrency, a form of electronic cash. It is a decentralized digital currency without a central bank or single administrator,[7] though some researchers point at a trend towards centralization.[9]:215, 219–222[10]:3
[2] https://en.bitcoin.it/wiki/Mining
[3] "Digital Currency" means any digital Blockchain based currency other than Bitcoin
[4] https://localbitcoins.com/
[5] https://www.icmarkets.com/en/
[6] https://www.binance.com/
[7] https://www.coinbase.com/legal/licenses?locale=en-US
[8] SECURITIES AND EXCHANGE COMMISSION (Release No. 34-83723; File No. SR-BatsBZX-2016-30) https://www.sec.gov/rules/other/2018/34-83723.pdf
[9] http://www.totalcryptos.com

official 'price' of Bitcoin which means buyers and sellers can transact at virtually any price they agree upon. The mean average price which is weighted according to volume and other quality metrics, is fundamentally different than a 'market index' like the S&P 500 which is a basket of multiple assets[10]. While it is possible to trade S&P futures at multiple venues, the price will not vary from venue to venue as it does with Bitcoin. The most similar market is foreign exchange "FX", also an unregulated OTC market, however unlike Bitcoin – foreign exchange is traded mostly by large regulated financial institutions, and the underlying assets are sovereign currencies which are backed by central banks and/or their respective governments. Also, due to the large liquidity and improvement in computer systems over the last 20 years, price discrepancies in foreign exchange are so slight it makes arbitrage unprofitable. That means it is possible to determine rates for any currency on a daily or even real-time basis with almost no variance from venue to venue. In fact FX pricing is so accurate, it has been used as a tool to uncover unscrupulous bucket shops like FXCM[11].

III.   The BIT FIX

The Total Cryptos price of Bitcoin represents the mean average of prices collected both publicly and privately from the following venue types:

- Exchange traded Bitcoin futures
- Bitcoin price aggregators
- Bitcoin 'exchanges'
- CFD Brokerages offering BTCUSD
- Peer to peer Bitcoin systems
- .. any venue offering Bitcoin markets (it is an evolving ecosystem, as new venues become available they will be added).

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[10] https://us.spindices.com/indices/equity/sp-500 The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over USD 9.9 trillion indexed or benchmarked to the index, with indexed assets comprising approximately USD 3.4 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

[11] "It is not implausible that purchasing a currency at $1.3660 instead of $1.3650 as a result of FXCM's abusive trading practices constitutes a loss for the customer, New York Court hears." https://financefeeds.com/former-customers-fxcm-insist-slippage-matters-serious/

Data Quality Analysis is performed automatically using a metric system, for example smaller exchanges will typically spike off market prices in order to incentivize customers to trade on their exchange (whether those prices are executable or not is another question.)[12]

Note that Bitcoin is generally denominated in USD but not exclusively. So part of the data monitoring includes non-USD BTC prices that are especially popular at non-USD venues, such as BTCEUR BTCKRW BTCJPY BTCCHF BTCGBP BTCAUD BTCCNY BTCNZD BTCZAR BTCCAD BTCRUB BTCINR BTCMXN

Others may be added in the future as needed. This decision is made on a volume basis, for example if volume of any source is 1 BTC it would be irrelevant.

Each day at 4:00pm New York Time (Eastern Standard/Daylight Time) in the United States of America, a snapshot is taken of the Bitcoin price, processed through the data quality assurance engine, compiled using a mean average including the statistical weighted formula; and published for Total Cryptos Members through REST API and also available at http://portal.totalcryptos.com/bitfix

IV.   COMMERCIAL TERMS AND ANTI-GAMING PROTECTIONS

The BIT FIX is offered as a part of zDATA product[13], a comprehensive data product for the Crypto Currency market. Total Cryptos is a service offered by Bloc10[14], a Delaware Corporation operated from 1 Glenlake Pkwy. Ste 525 Atlanta, GA 30328.

In order to protect BIT FIX against fraud and manipulation, we do not disclose the sources or the exact method of data processing. We have developed a proprietary anti-gaming system based on Machine Learning, which will randomly include and exclude sources based on the result of the ML[15]. This ensures that it would be impossible for a group to 'game' the BIT FIX because it is based on dynamic variables that even if they knew what it was yesterday, wouldn't apply today. This method does not increase variance above a statistically significant level (in fact, it is part of data quality assurance).

BIT FIX is available at portal.totalcryptos.com

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[12] http://bloc10.com/alert-crypto-data-mostly-fake-where-to-go-from-here/
[13] https://portal.totalcryptos.com/total-cryptos-professional-data-service
[14] www.bloc10.com
[15] https://portal.totalcryptos.com/crypto-currency-price-machine-precognition-engine