EXCHANGE REVIEW

CryptoCompare

September 2018

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Contents

1 Executive Summary 4

2 Summary of Changes to CCCAGG 5

3 Market Overview 6

4 Top 25 Exchanges 8

5 Pair Offerings & Fiat Support 9

6 Country Analysis 10

7 CCCAGG Ecosystem 11

8 Exchange KYC Requirements 12

9 September Exchange News 13

10 CCCAGG Exchange Review 14

1. Executive Summary

Volumes, Pairs and Coins

Top exchanges by average 24h trading volume for September were Binance ($1.06bn), OKEX ($544m), and Bitfinex ($455m). Binance also had the highest number of liquid pairs (those with over $10k a day in trading volume) at 348, followed by OKEX with 333 and HuobiPro with 281. The market saw a 1.1% decrease in trading volumes since August, from an average of $5.77bn p/d to an average of $5.71bn p/d.

Country Analysis

By legal jurisdiction, exchanges based in Malta (Binance, OKEX, 2 others) generated the highest 24h trading volume at $1.62bn. These were followed by exchanges in Hong Kong (LBank, HitBTC, 7 others - $841m) and exchanges in British Virgin Islands (Bitfinex, Ethfinex - $455m). In terms of large exchanges (over $25m daily trading volume), the jurisdictions tied for most are Hong Kong (largest exchange: LBank) and USA (largest exchange: Kraken), which each have 5 such exchanges. These are followed by South Korea, which has 2 such exchanges, the largest of which is Upbit.

Pair Offerings

The most common type of exchange in this review is the Dual Exchange, of which there are 66. The remainder are Crypto-to-Crypto (51) or Fiat-to-Crypto (19). Of these, those that generated the highest total volume were Crypto-to-Crypto Exchanges ($3.67bn). Second highest volumes came from Dual Exchanges ($1.8bn), with Fiat-to-Crypto Exchanges generating $242m.

Fiat Trading Volume

The U.S. Dollar (USD) traded $812m per day into crypto in September - 54% of all crypto-to-fiat trading. The Japanese Yen (JPY) traded $260m per day into crypto (17.3% of the total), the Korean Won (KRW) traded $258m per day (17.1%), and the Euro (EUR) traded $120m per day (7.97%). Aside from the major currencies, the Australian Dollar (AUD) made up 0.78% of the total, followed by the Polish Zloty (PLN) (0.63%), the Pound Sterling (GBP) (0.47%), and the Vietnamese Dong (VND) (0.43%).

Major Exchange News in September

Zaif was ordered by the FSA to adhere to a business improvement order. NY Attorney General warned that three exchanges (Binance, Gate.io, Kraken) may be breaking the law. Binance reveals a plan to launch crypto exchanges on almost every continent. Japanese exchange Zaif was hacked for 6.7 billion yen (60m USD). Huobi Group is planning to expand trading services to Japan via BitTrade purchase. Quoine unveils Liquid.

KYC Requirements

Out of a pool of 115 exchanges researched, 35% implement strict KYC policies, 29% implement flexible KYC policies (dependant on amount traded or if a fiat withdrawal is desired), and 36% do not require KYC. Furthermore, 47% of exchanges require a platform profile photo for ID, while 49% do not and for 4% it depends on the amount traded.

2. Summary of Changes to CCCAGG

What Changed in September?	New exchanges added to CryptoCompare – pending further data (11):	BYTEX, CoinTiger, iCoinbay, Stocks.Exchange, P2PB2B, IQFinex, MineBit, Liquid, BCEX, LIQNET, BitForex
	Exchanges shut down (ceased trading completely): (0)	None
August Exchanges to be Assessed Following Minimum Monitoring Period (30 days)	Exchanges (17)	Globitex, Nlexch, BTCAlpha, CoinFalcon, TDAX, Bitsane, CoinPulse, InstantBitex, CoinJar, Bitinfi, Gneiss, FCCE, Ironex, Cryptonit, Ore, ACX, Zecoex
Result of the Current Review:	August exchanges to be included in CCCAGG (12):	Globitex, BTCAlpha, CoinFalcon, Bitsane (Volume Only), CoinJar, Bitinfi, Gneiss, FCCE, Ironex (Volume Only), Cryptonit, ACX, Zecoex.
	Existing exchanges to be included in CCCAGG (0):	None
	Exchanges to be Removed from CCCAGG (1):	Bitexbook (Pricing)
Implementation Date:	3rd October 2018	

3. Market Overview

Key Takeaways

- Binance remained the world's top exchange in September, with a trading volume growth of 0.62% since August.
- Of the top 10 exchanges, Bitfinex showed the strongest growth in trading volume - up 61% since August. OKEX fared the worst, with a 37.3% fall in volume.
- The Herfindahl-Hirschman Index[1] for exchanges in September was 0.0693, indicating a moderate degree of competitiveness in the industry.

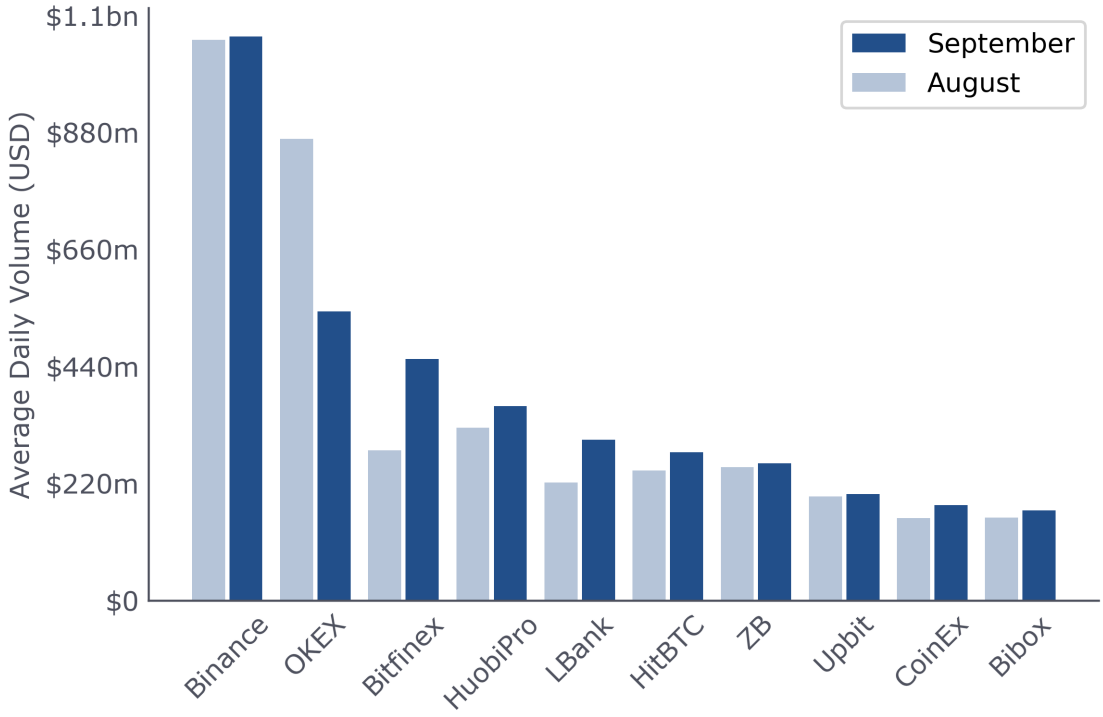

Figure 3.1: **Top 10 Exchanges by Average Daily Trading Volume**

[1] A market's Herfindahl-Hirschman Index is the sum of the squares of each incumbent firm's share of the market. If there are only three exchanges, accounting for 60%, 30% and 10% of market volume respectively, the HHI is given by $0.6^2 + 0.3^2 + 0.1^2 = 0.46$. A higher HHI indicates a higher degree of market concentration.

Figure 3.2: **Total Market Trading Volume: August vs. September**

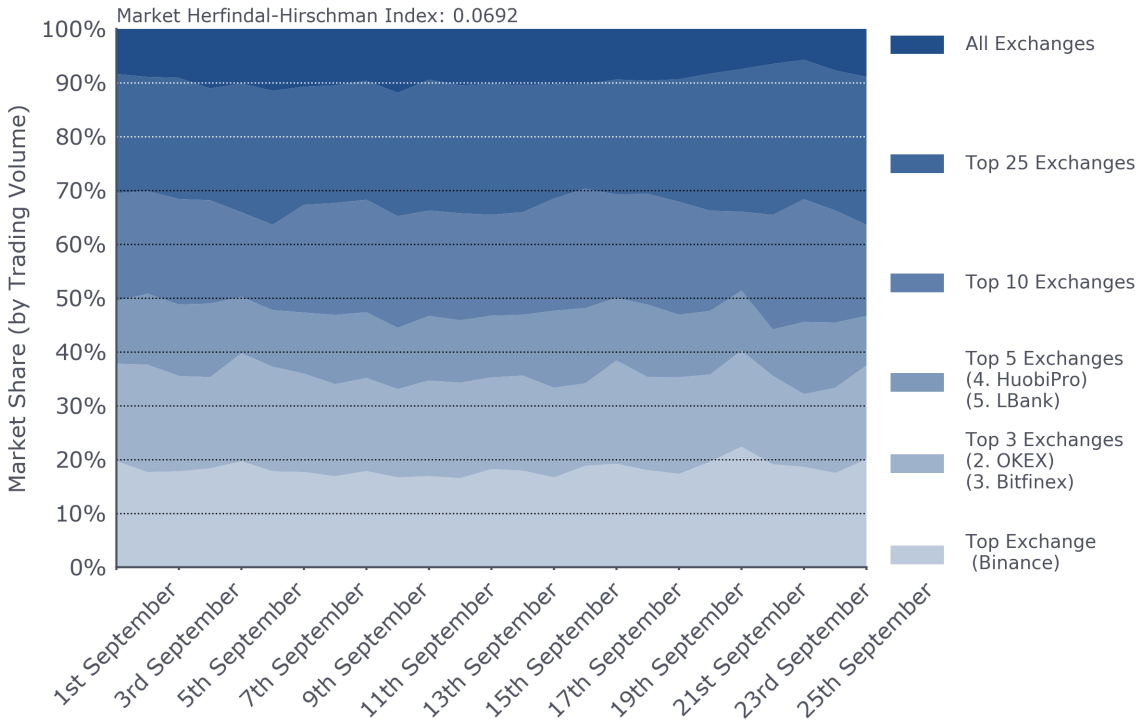

Figure 3.3: **Daily Market Concentration**

4. Top 25 Exchanges

	Exchange	Daily Volume	Liquid Pairs[2]	Exchange Type	Fiats Supported	Jurisdiction
1	**Binance**	$1,061,416,948	348	Crypto-Crypto		Malta
2	**OKEX**	$544,380,938	333	Crypto-Crypto		Malta
3	**Bitfinex**	$454,863,927	99	Dual	4 (Primary: USD)	British Virgin Islands
4	**HuobiPro**	$365,982,967	281	Crypto-Crypto		Seychelles
5	**LBank**	$302,556,491	95	Crypto-Crypto		Hong Kong
6	**HitBTC**	$279,063,804	215	Dual	USD only	Hong Kong
7	**ZB**	$258,516,138	77	Crypto-Crypto		Samoa
8	**Upbit**	$200,384,956	213	Dual	KRW only	South Korea
9	**CoinEx**	$180,269,152	75	Crypto-Crypto		Hong Kong
10	**Bibox**	$169,930,726	88	Crypto-Crypto		Estonia
11	**EXX**	$151,270,877	35	Crypto-Crypto		Unknown
12	**CoinBene**	$150,802,668	83	Crypto-Crypto		Vanuatu
13	**Kraken**	$128,124,994	55	Dual	5 (Primary: USD)	USA
14	**Bithumb**	$126,273,138	13	Crypto-Fiat	KRW only	South Korea
15	**Coinbase**	$124,424,895	18	Dual	3 (Primary: USD)	USA
16	**FCoin**	$118,727,565	41	Crypto-Crypto		Unknown
17	**IDAX**	$109,102,910	62	Crypto-Crypto		Mongolia
18	**Bitstamp**	$80,185,309	14	Dual	2 (Primary: USD)	UK
19	**Quoine**	$64,474,492	18	Dual	9 (Primary: JPY)	Singapore
20	**Gateio**	$57,355,939	139	Crypto-Crypto		Cayman Islands
21	**BitTrex**	$54,756,334	227	Dual	USD only	USA
22	**Poloniex**	$51,439,024	79	Dual	USD only	USA
23	**BitBank**	$49,280,312	8	Dual	JPY only	Unknown
24	**Zaif**	$47,687,680	15	Dual	JPY Only	Japan
25	**BitZ**	$45,393,492	119	Crypto-Crypto		Hong Kong

Table 4.1: **Top 25 Exchanges by Average Daily Trading Volume**

[2]Liquid Pairs are defined as those which had average trading volumes above $10,000 p/d for September on the relevant exchange.

5. Pair Offerings & Fiat Support

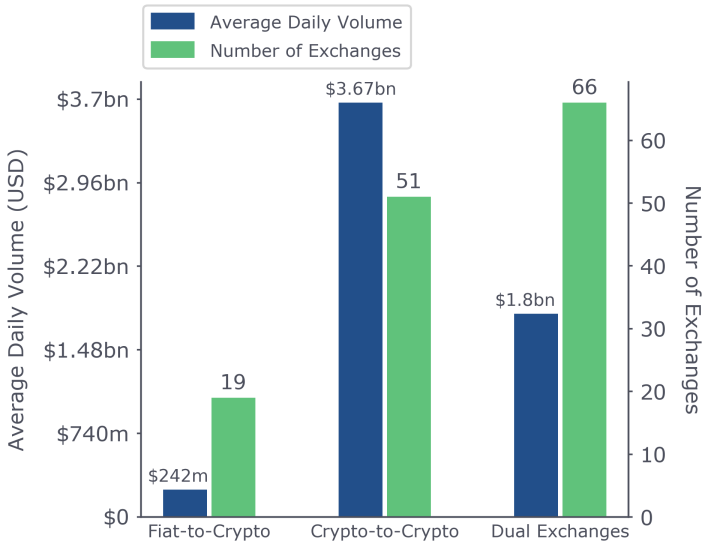

Figure 5.1: **Total Average Daily Trading Volumes by Exchange Type**

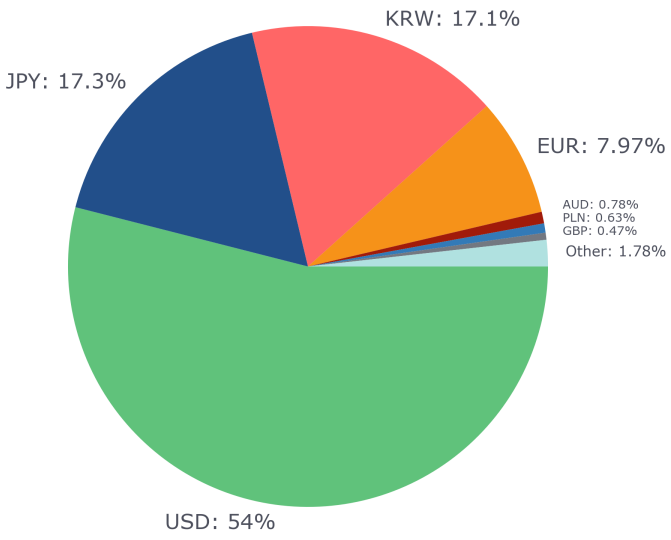

Figure 5.2: **Fiat Currencies as a Proportion of All Crypto-Fiat Trading**

6. Country Analysis

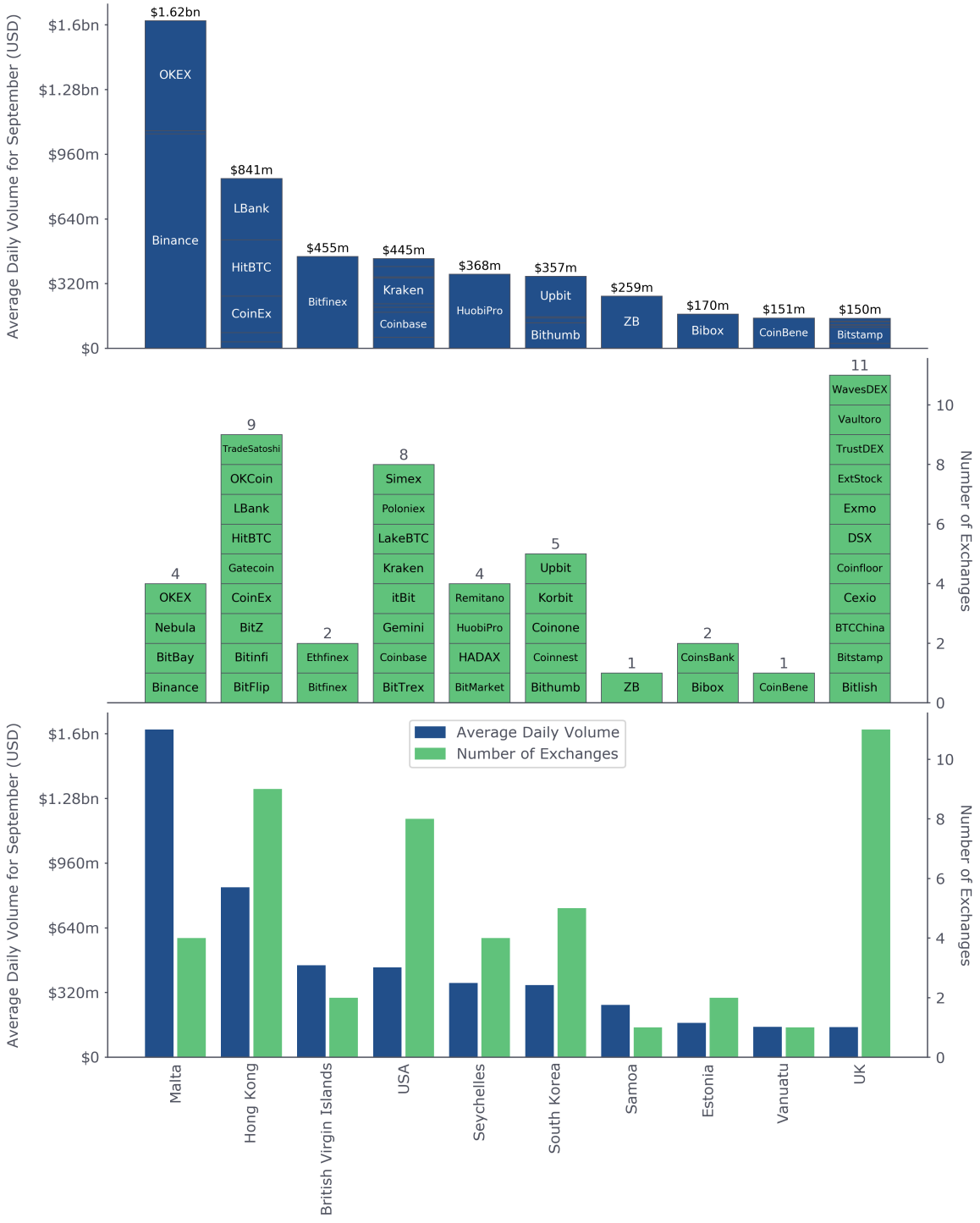

Figure 5.1: **Average Daily Trading Volumes and Exchange Population by Jurisdiction**

Top 10 Jurisdictions by Average Daily Trading Volume

7. CCCAGG Ecosystem

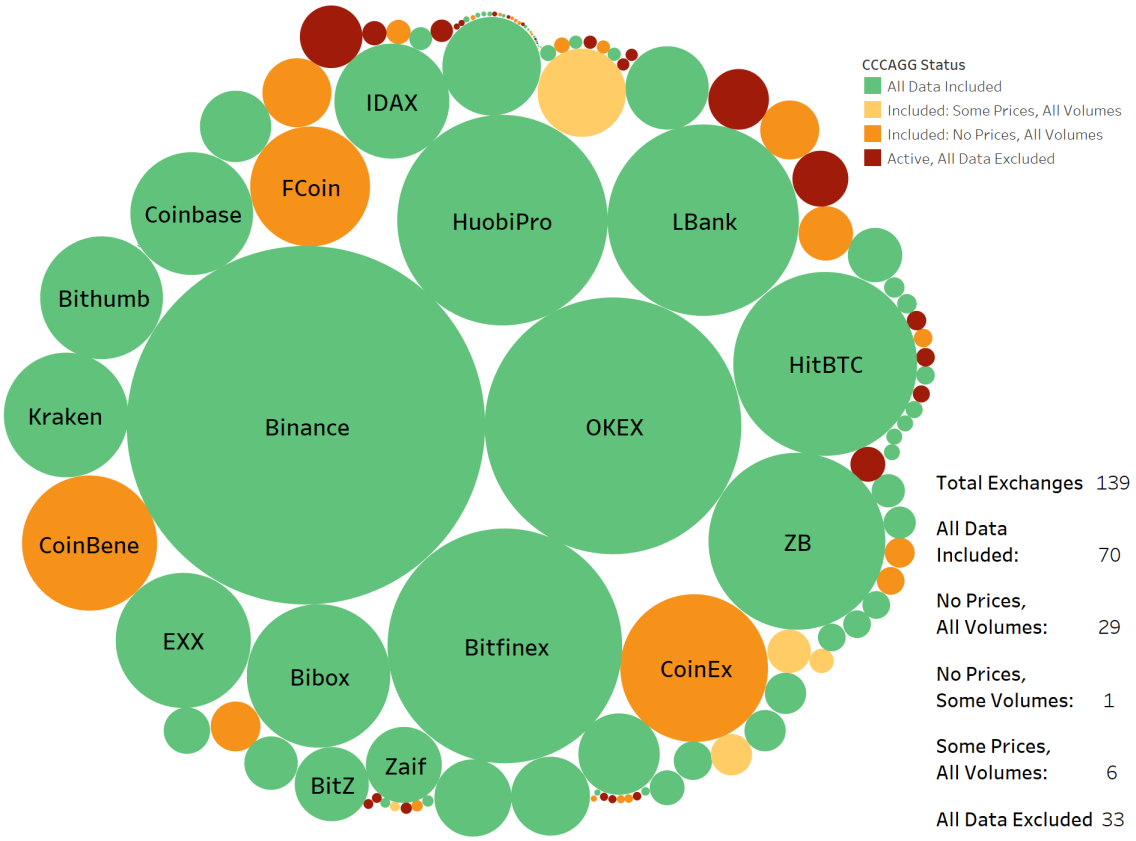

Figure 7.1: **CCCAGG Ecosystem**[3]

Bubble size indicates average daily trading volume

[3]The CCCAGG is CryptoCompare's data aggregation mechanism. For a more detailed look at the September changes to the CCCAGG, and for an explanation of its methodology, please consult this document's couterpart, Exchange Review: CCCAGG Consituent Exchanges.

8. Exchange KYC Requirements

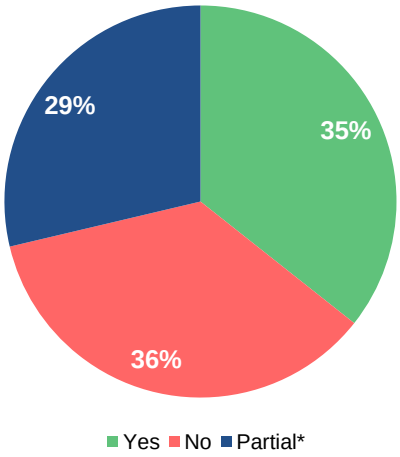

Figure 8.1: **Proportion of Exchanges that Require KYC**
**Depends on amount traded or if withrawal of fiat*

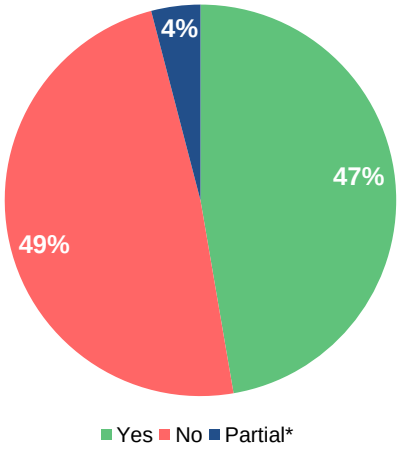

Figure 8.2: **Proportion of Exchanges that Require Photo Verification**
**Depends on amount traded or if withrawal of fiat*

9. September Exchange News

Zaif

Zaif Ordered by the FSA to Adhere to Business Improvement Order - September 25

Binance, Gate.io, Kraken

NY Attorney General Warns Three Crypto Exchanges May Be Breaking the Law - September 19

Binance

Binance Reveals Plan to Launch Crypto Exchanges on Almost Every Continent – September 19

Zaif

Japanese Exchange Zaif Hacked for 6.7 billion yen (60m USD) - September 14

Huobi

Huobi Group to expand Trading Services to Japan via BitTrade Purchase - September 12

Quoine

Quoine Unviels Liquid – September 7

10. CCCAGG Exchange Review

10.1 General CCCAGG Inclusion/Exclusion Methodology

This review is conducted on a monthly basis in order to maintain a minimum exchange standard among constituent CCCAGG exchanges. Given the growing number of cryptocurrency exchanges, as well as those that shut down due to regulation, bankruptcy and so on, it is necessary to evaluate whether prices and volumes are representative of the market so that investors and fund managers using the CCCAGG indices can be assured that they receive the most accurate information for their purposes. We are not in the business of policing cryptocurrency exchanges, but simply set a guideline based on how the majority of cryptocurrency exchanges operate. These majority figures are used as a standard with which to assess whether a cryptocurrency exchange is operating in line with most of its industry. Having said this, the industry is constantly evolving and often times one cryptocurrency exchange might not reflect the patterns demonstrated by the majority, for reasons that might relate to innovation, an alternative business model etc. In these cases, CryptoCompare attempts to use our best judgement with preference towards a hands-off approach so that industry developments are accurately reflected. Over time, our guiding standards with which to assess cryptocurrency exchanges will also develop in line with the industry to produce the most representative group of CCCAGG exchanges.

10.1.1 Data Processing Procedure

Cryptocompare currently assesses exchanges on the basis of 24-hour volume and pricing data. Every exchange within the CCC database is assessed in this review, with additional exchanges being added or excluded on a monthly basis for a variety of reasons. The 24-hour volume and price of every live trading pair from every exchange is recorded. Each pair volume is compared to the total market volume for that specific pairing and assigned a market share ranking. Pricing for each pair is compared to that of the CCCAGG pair, and a percentage price difference is calculated. Finally, a volume weighted % price difference per pairing is calculated to produce a figure for how close the overall exchange pricing differences are to that of the CCCAGG.

10.1.2 % Price Difference vs CCCAGG

As a general guideline, CryptoCompare assumes that exchanges with an overall percentage pricing difference of under 10% is within acceptable boundaries. The reasons for pricing differences across exchanges may be related to a number of factors that include exchange fees, jurisdiction, tax considerations among a series of other factors. It is however, the first indicator of acceptability within the CCCAGG exchange list.

10.1.3 Assessment Period

For new exchanges added to the platform, CryptoCompare assigns a minimum period of one month to gather data on the exchange before adding it directly to the CCCAGG calculations. Up to the next monthly exchange review, as long as there is adequate positive volume and pricing data, the exchange will be assessed in the same way as all the existing exchanges and added to the CCCAGG if guidelines are met.

10.1.4 Dead Exchanges

Frequently, exchanges will stop trading for a variety of reasons that include bankruptcy, hacking, regulatory reasons and so on. Contingent upon sufficient market data being provided (usually one month), if an exchange has minimal to no trading volume it will be excluded from the CCCAGG and will be assigned an inactive status.

10.1.5 Market Share for Specific Pairs

There are many cases in which significant pricing differences occur relative to the CCCAGG for a number of pairs that only trade on very few exchanges. The reason for this often points to a lack of liquidity for specific

pairs or perhaps a decentralized exchange. If this is the case, then there is usually an exception to the 10% pricing guideline vs. CCCAGG pricing. Providing that a specific pair on an exchange represents at least 20% of the market volume or ranks at least 3rd for market share, and prices are within a reasonable boundary, this pair would be deemed acceptable. In addition, for certain pairs that are unique to only a handful of exchanges, pricing will vary considerably the lower the liquidity of the pair in question. In this case, more flexibility is given to pricing differences on low liquidity pairs.

10.1.6 Current CryptoCompare Policy Towards Zero-Fee and TFM Exchanges

Zero-fee exchanges as well as transaction-fee mining exchanges present a problem when it comes to assessing whether trading volume as well as pricing is legitimate due to the well-known criticisms of exchanges engaged in these practices. When it comes to zero-fee exchanges, traders are able to trade freely without fees regardless of how many trades are made; hence, volumes might become inflated. In a similar fashion, transaction fee mining exchanges rebate 100% of transaction fees in the form of their own exchange tokens. This might give traders an incentive to trade more to receive more tokens which often have valuable features such as voting rights on the platform or a dividend. Both of the above can effectively lead to wash trading. Nonetheless, regardless of the incentives or risks to those trading on the platform, it is not up to CryptoCompare or within our means at present to judge whether trading volume is legitimate or not. For this reason, transaction-fee mining volume is included within the CCCAGG in the current policy, but excluded from the average price calculation, as these exchanges pose the risk of runaway or market crash. This policy will be reviewed and improved for the next exchange review when more in-depth analysis has been conducted.

10.1.7 Futures Trading

Despite the significant volumes witnessed for bitcoin futures trading on platforms such as BitflyerFX and BitMex, these volumes represent futures trading volume, and not spot trading volumes. For this reason, they are excluded from CCCAGG calculations.

10.2 CCCAGG Exchange Pricing Analysis

10.2.1 Initial Review of New August Exchanges Following Monitoring Period

Exchange	Abs Perc. Price Diff. vs CCCAGG	Average 24H Volume (USD)	RESULT
InstantBitex	0.0051	Errors in Volume Noted	EXCLUDED
TDAX	More trades required	Errors in Volume Noted	EXCLUDED
Bitinfi	0.0012	32506238	FURTHER REVIEW
FCCE	0.0082	26347127	FURTHER REVIEW
Bitsane	0.005	4623870	FURTHER REVIEW
BTCAlpha	0.0476	4070947	FURTHER REVIEW
Zecoex	0.0104	1612178	FURTHER REVIEW
ACX	0.0064	865368	FURTHER REVIEW
CoinJar	0.007	564254	FURTHER REVIEW
Ironex	0.0124	550676	FURTHER REVIEW
CoinFalcon	0.03	146999	FURTHER REVIEW
Globitex	0.0052	45417	FURTHER REVIEW
Gneiss	0.0021	3691	FURTHER REVIEW
Cryptonit	0.0272	2648	FURTHER REVIEW
CoinPulse	More trades required	2280	EXCLUDED
Ore	12.3798	612	EXCLUDED
Nlexch	More trades required	376	EXCLUDED

10.2.2 Secondary Review of New August Exchanges Following Monitoring Period

	Exchange	Absolute % Price Difference vs CCCAGG	Average 24H Volume (USD)	Notes	Volume Result	Pricing Result
1	Bitinfi	0.12%	32,506,238	Pricing consistent with CCCAGG. No unusual volatility in highest trading pairs.	INCLUDE	INCLUDE
2	FCCE	0.82%	26,347,127	5 pairs in total, one of which is relatively liquid: BTC_JPY. Out of all non-zero volume pairs, none are outside the 10% pricing boundary.	INCLUDE	INCLUDE
3	Bitsane	0.50%	4,623,870	Average prices in line with CCCAGG prices. However certain higher-volume pairs show high price volatility and volume patterns that resemble unusual trading behavior	INCLUDE	EXCLUDE
4	BTCAlpha	4.76%	4,070,947	Most pairs are illiquid 70/80. For pairs that do not represent significant market share, prices are in line with the CCCAGG. For those that do, pairs are relatively illiquid and naturally fluctuate in price.	INCLUDE	INCLUDE
5	Zecoex	1.04%	1,612,178	Almost all pairs in line with CCCAGG pricing and within the 10% boundary. For those outside of this boundary, the pair is illiquid and Zecoex maintains significant market share.	INCLUDE	INCLUDE
6	ACX	0.64%	865,368	Pairs (11 total) in line with CCCAGG within a 1% boundary. Only pairs that are illiquid diverge significantly.	INCLUDE	INCLUDE
7	CoinJar	0.70%	564,254	Only 4 pairs, all within 1% of CCCAGG, and all liquid	INCLUDE	INCLUDE
8	Ironex	1.24%	550,676	Average prices in line with CCCAGG. However, high volatility for ETH_BTC, ADA_BTC, XRP_BTC, DASH_BTC among others relative to the market.	INCLUDE	EXCLUDE
9	CoinFalcon	3.00%	146,999	Pricing is within 10% boundary. Price exceeds price boundary for pairs of liquidity or significant market share.	INCLUDE	INCLUDE
10	Globitex	0.52%	45,417	For pair with any significant volume BTC_EUR, price is in line with CCCAGG to <1% difference. No unusual trading patterns.	INCLUDE	INCLUDE
11	Gneiss	0.21%	3,691	Prices within 3% of CCCAGG prices for respective pairs. No unusual volatility in top trading pairs relative to the those markets.	INCLUDE	INCLUDE
12	Cryptonit	2.72%	2,648	All pair pricing within 10% of CCCAGG prices. Two relatively higher liquidity pairs are ETH_EUR and BTC_EUR.	INCLUDE	INCLUDE

10.2.3 Review of Existing Exchanges of Concern

	Exchange	Absolute % Price Difference vs CCCAGG	Average 24H Volume (USD)	Notes	Volume Result	Pricing Result
1	Bitexbook	2.00%	36,316	High price volatility for higher volume pairs ZEC_BTC, DOGE_BTC, BTC_USD etc relative to the equivalent CCCAGG pairs.	NO CHANGE	EXCLUDE

10.3 Changes to CCCAGG Consituent Exchanges Following Review

Exchange Additions to CCCAGG from Existing Exchanges (0)

No new additions from existing exchanges.

Exchange Additions to CCCAGG from New August Exchanges Monitored in September (12)

Globitex, BTCAlpha, CoinFalcon, Bitsane (Volume Only), CoinJar, Bitinfi, Gneiss, FCCE, Ironex (Volume Only), Cryptonit, ACX, Zecoex.

Existing Exchange Exclusions from Current CCCAGG (1)

Bitexbook (Exclude Price Only).

Existing Exchanges with Limited Trading Activity (0)

No dead exchanges noted.

New Exchanges Added in September Pending Further Data and Review (11):

BYTEX, CoinTiger, iCoinbay, Stocks.Exchange, P2PB2B, IQFinex, MineBit, Liquid, BCEX, LIQNET, BitForex

All visualisations and analyses were conducted using data from CryptoCompare's API, which can be found at `https://min-api.cryptocompare.com/`.