



Digital
Gold
Institute

Real Volume: The Rock Trading Exchange

A supplement to the Bitwise report presented in March 2019 to SEC

April 23, 2019

Introduction

- In the presentation to SEC [1] advocating their ETF, Bitwise investigated the real **liquidity of the Bitcoin market**
- Bitwise analyzed the **81 “top” Bitcoin exchanges** by reported volume
- The **vast majority of reported volume turned out to be fake** and/or non-economic wash trading
- In this document the same analysis criteria have been applied to the trading volume reported by *The Rock Trading* exchange











[1] www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

The Bitwise Analysis

Criteria:

1. Buy/sell trades and their size
2. Bid/ask spread
3. Distributions of volumes

Out of 81 exchanges, only **10 exchanges have credible volumes**

 BINANCE \$110M*	 BITFINEX \$38M*	 kraken \$31M*	 Bitstamp \$31M*	 coinbase \$27M*
 bitFlyer \$14M*	 GEMINI \$8M*	 itBit \$6M*	 BITTREX \$5M*	 POLONIEX \$1.4M*

The Digital Gold Institute (DGI) Supplement to Bitwise Analysis

Same analysis criteria applied to **The Rock Trading** (TRT):

- The longest running Bitcoin exchange in the world
- Never been hacked
- Based in Italy

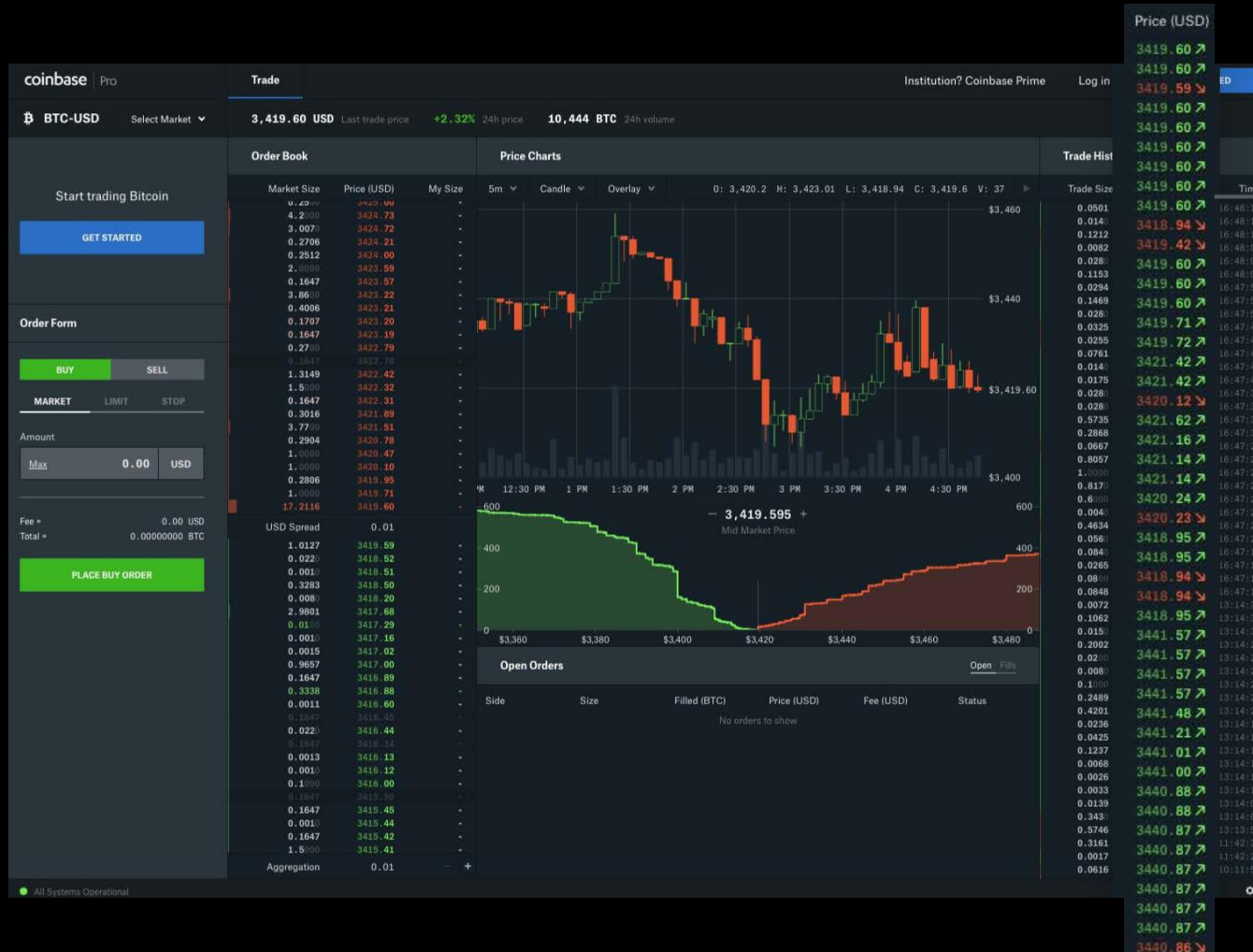


DGI analysis shows that TRT reported **trading volume is credible**



The Bitwise Analysis

1. Bitwise Analysis on Trades Credible Exchange: Coinbase Pro



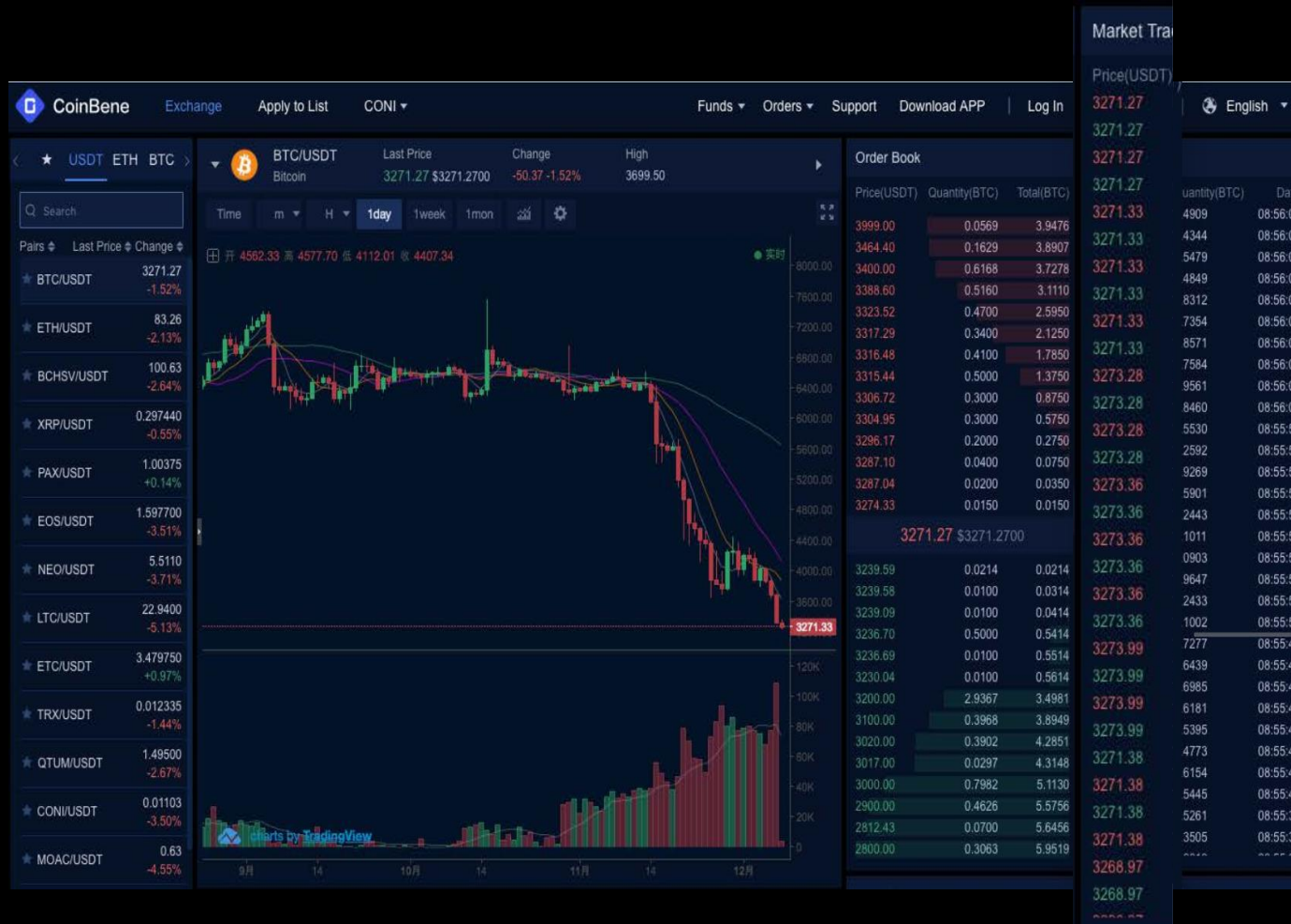
Trades: green represents buy orders, red represents sell orders

An **unequal and streaky mix** of red and green trades is evident

This is the behavior of a **credible exchange**

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

1. Bitwise Analysis on Trades Suspicious Exchange: CoinBene



Trades: green represents buy orders, red represents sell orders

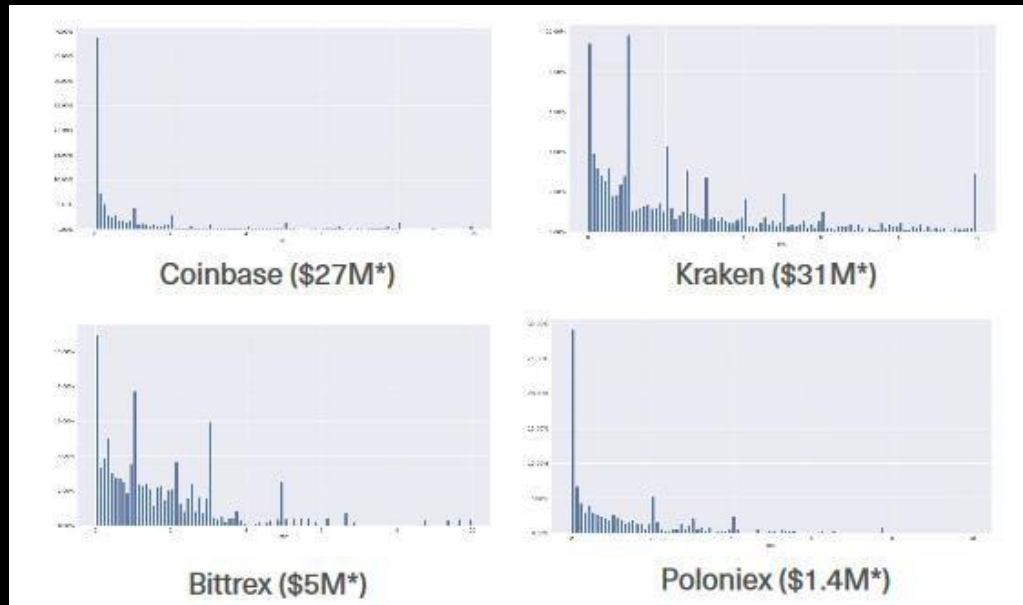
A **perfectly alternating pattern** of red and green trades is evident

This is the behavior of a **suspicious exchange**

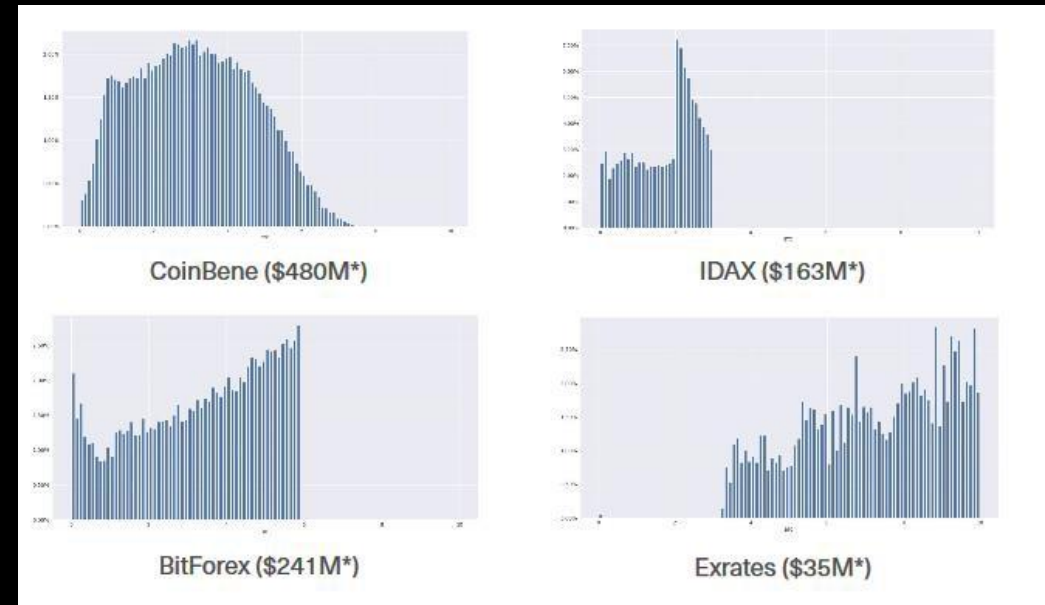
Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

1. Bitwise Analysis on Trades Size Distribution

Credible Exchange



Suspicious Exchange

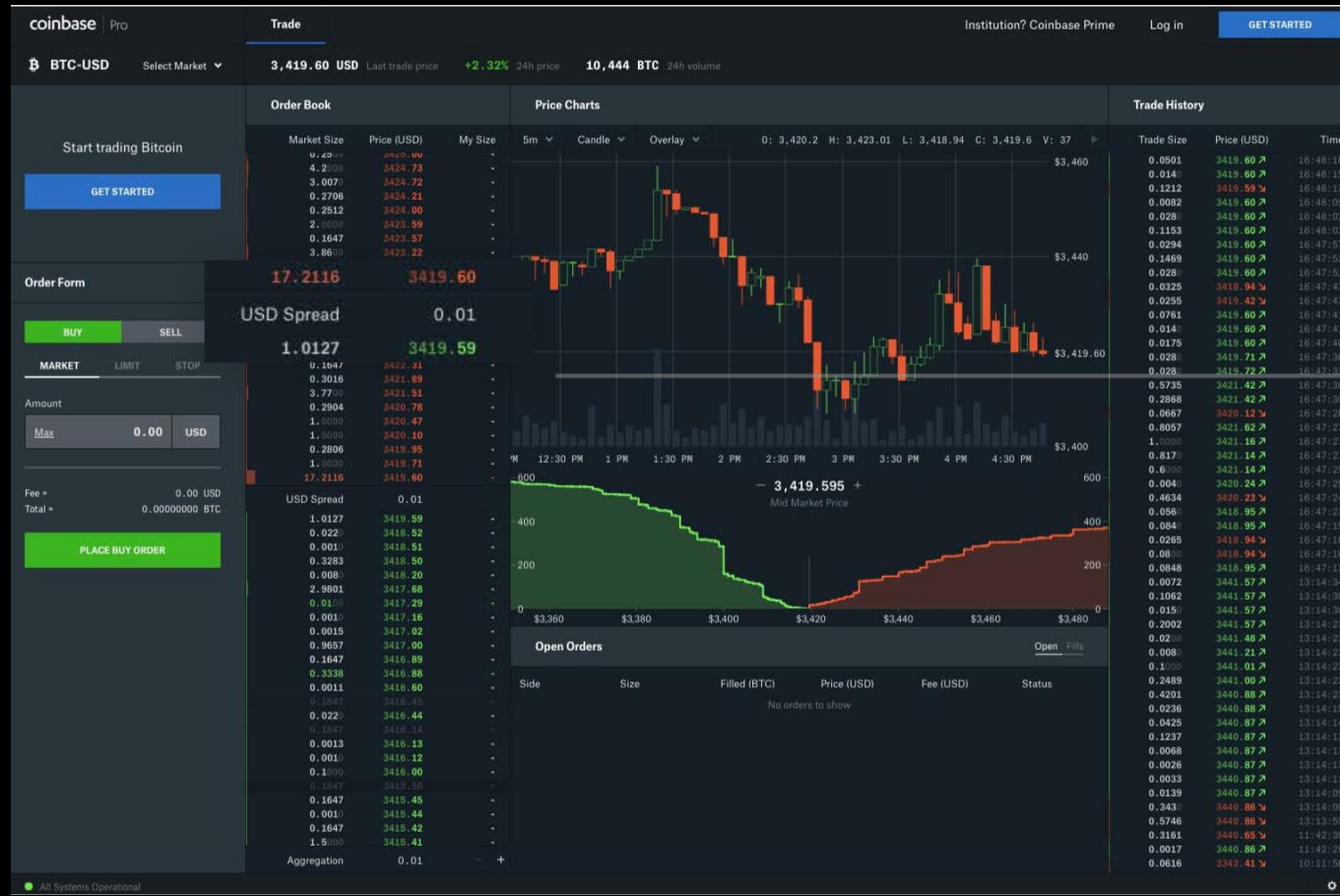


"These histograms show the percentage of volume that is captured within each trade size bucket (0-0.1 BTC, 0.1-0.2 BTC, etc.). [On credible exchanges] they reveal consistent, intuitive patterns: percentage weight in each bucket declines as trade size increases, and there are noticeable peaks at whole bitcoin sizes (1, 2, 3, etc.). X-axis is from 0 to 10 BTC"

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

2. Bitwise Analysis on Bid/Ask Spread Credible Exchange: Coinbase Pro

Bid/Ask Spread: \$0.01



"At the time this screenshot was taken, bitcoin was trading at \$3,419. That means bitcoin was trading at a 0.0003% spread, making it amongst the tightest quoted spread of any financial instrument in the world."

This is the behavior of a **credible exchange**

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

2. Bitwise Analysis on Bid/Ask Spread Suspicious Exchange: CoinBene

Bid/Ask Spread: \$34.74



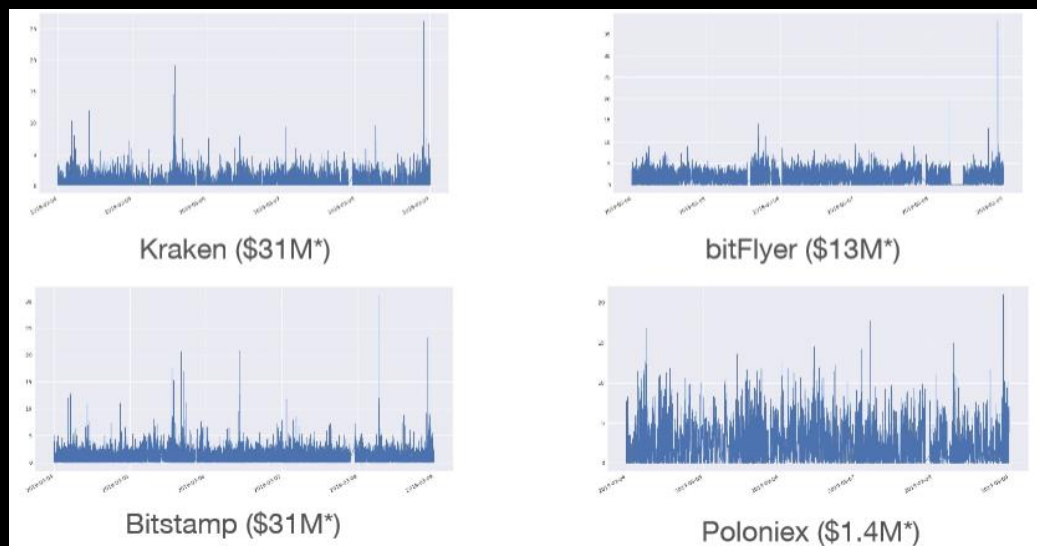
At the time this screenshot was taken, the spread was 3400x larger than the Coinbase one, even if the declared volume of CoinBene was 18x larger

This is the behavior of a **suspicious exchange**

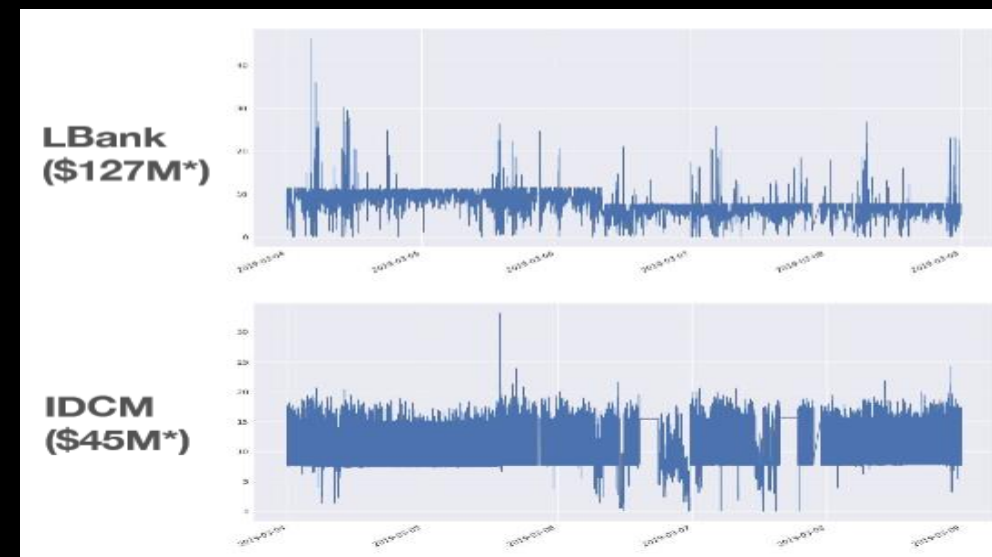
Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

2. Bitwise Analysis on Bid/Ask Spread Pattern

Credible Exchange



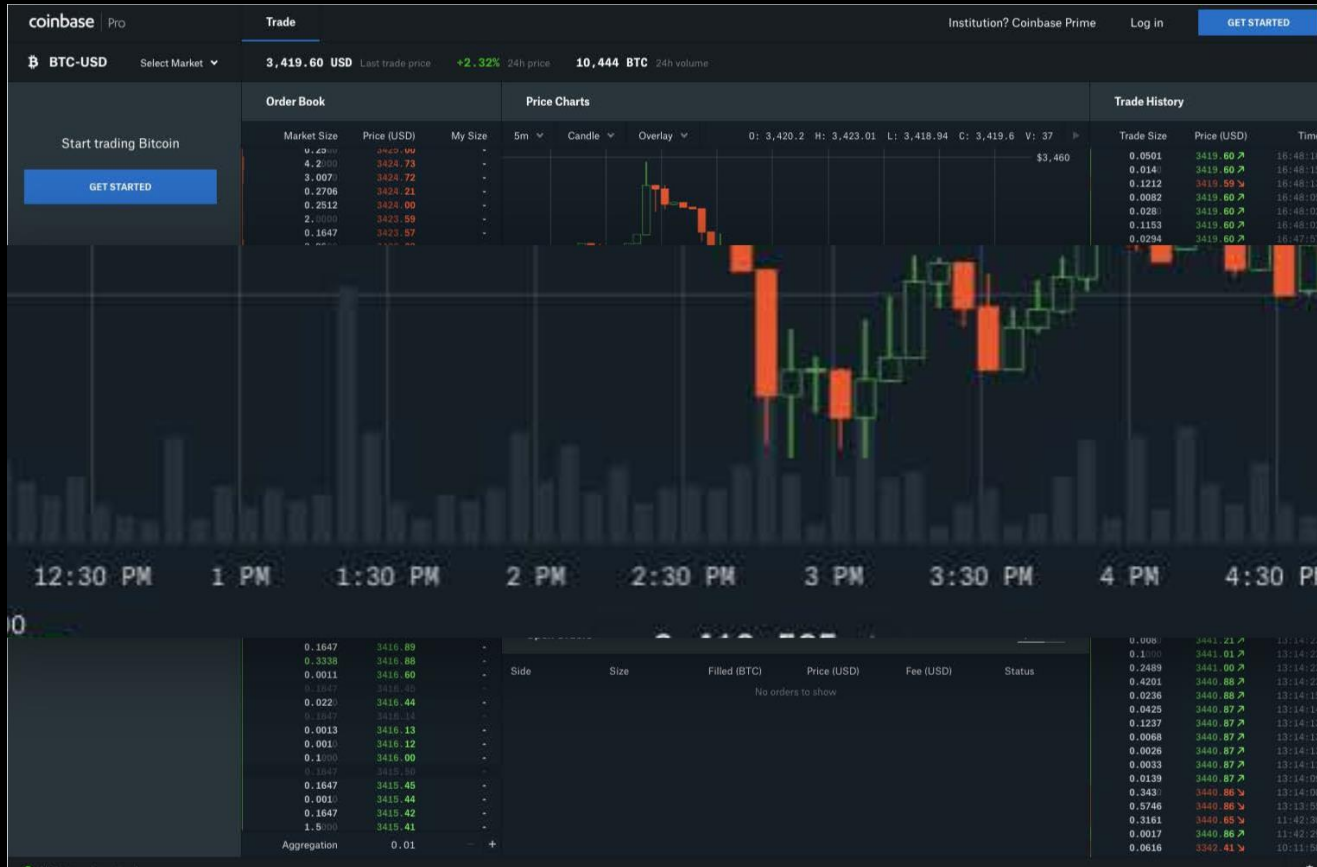
Suspicious Exchange



"Spreads on well-known exchanges show a consistent pattern, anchoring on zero with random variability, and then spiking periodically to reflect momentary surge in volatility and change of the order book"

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

3. Bitwise Analysis on Volume Credible Exchange: Coinbase Pro



Volume distribution: each grey candle represents the amount traded in 5 minutes

"Notice that the size of these candles changes over time: Some 5-minute periods have more volume than others, as you would expect."

This is the behavior of a **credible exchange**

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

3. Bitwise Analysis on Volume Suspicious Exchange: CHAOEX

Volume distribution: each of these bars reflects one hour's volume



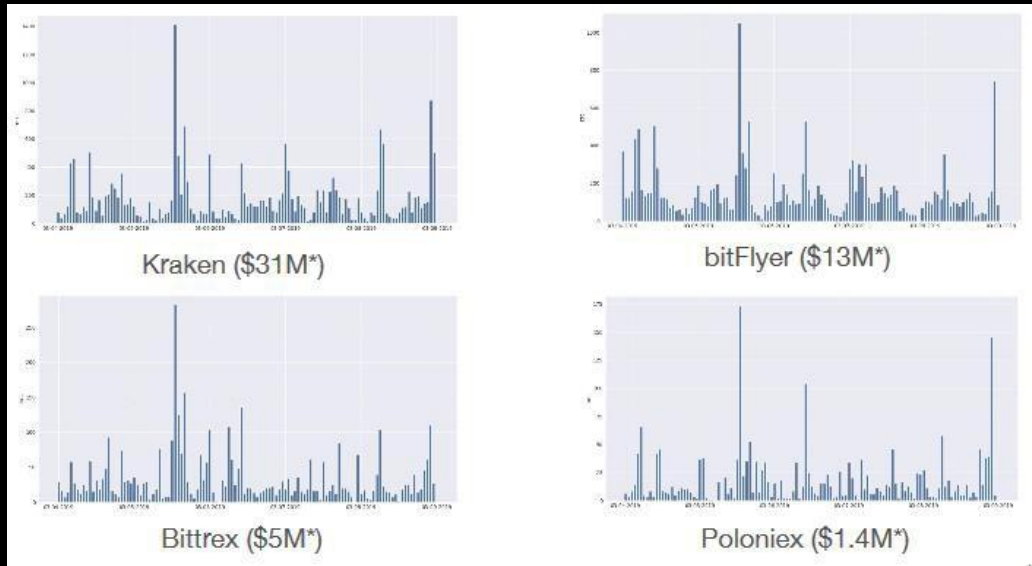
"It is highly unlikely that real trading volume would remain this consistent every hour of the day for nearly three consecutive days."

This is the behavior of a **suspicious exchange**

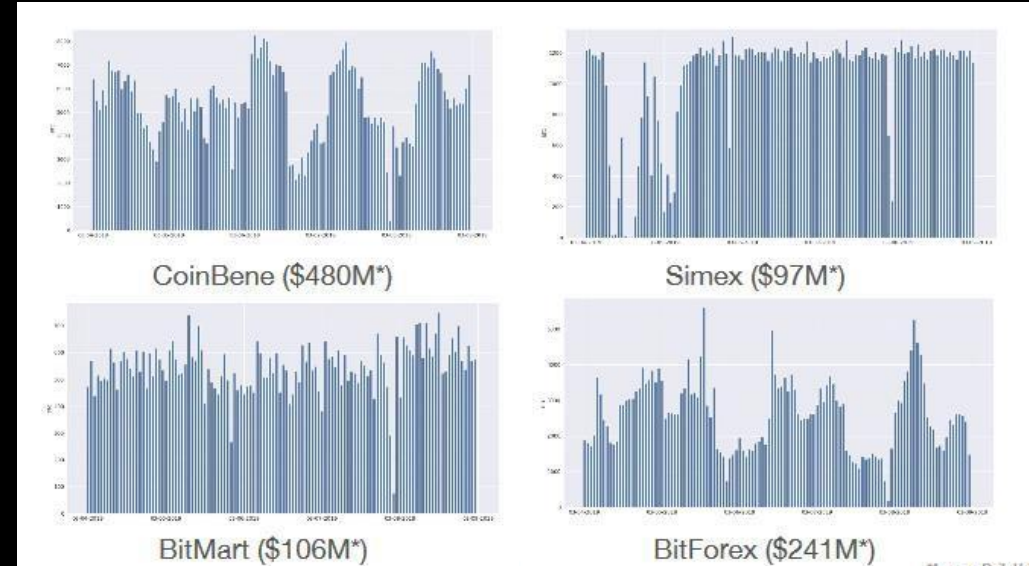
Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf

3. Bitwise Analysis on Volume Pattern and Spikes

Credible Exchange



Suspicious Exchange



"In a globally integrated market like bitcoin, you would expect exchange volume to rise and fall at the same time across all exchanges. It does for well-known exchanges. Notably, volume spikes align at literally the same hour for each of the exchanges below."

Source: www.sec.gov/comments/sr-nysearca-2019-01/srnysearca201901-5164833-183434.pdf



Supplemental Analysis

The Rock Trading



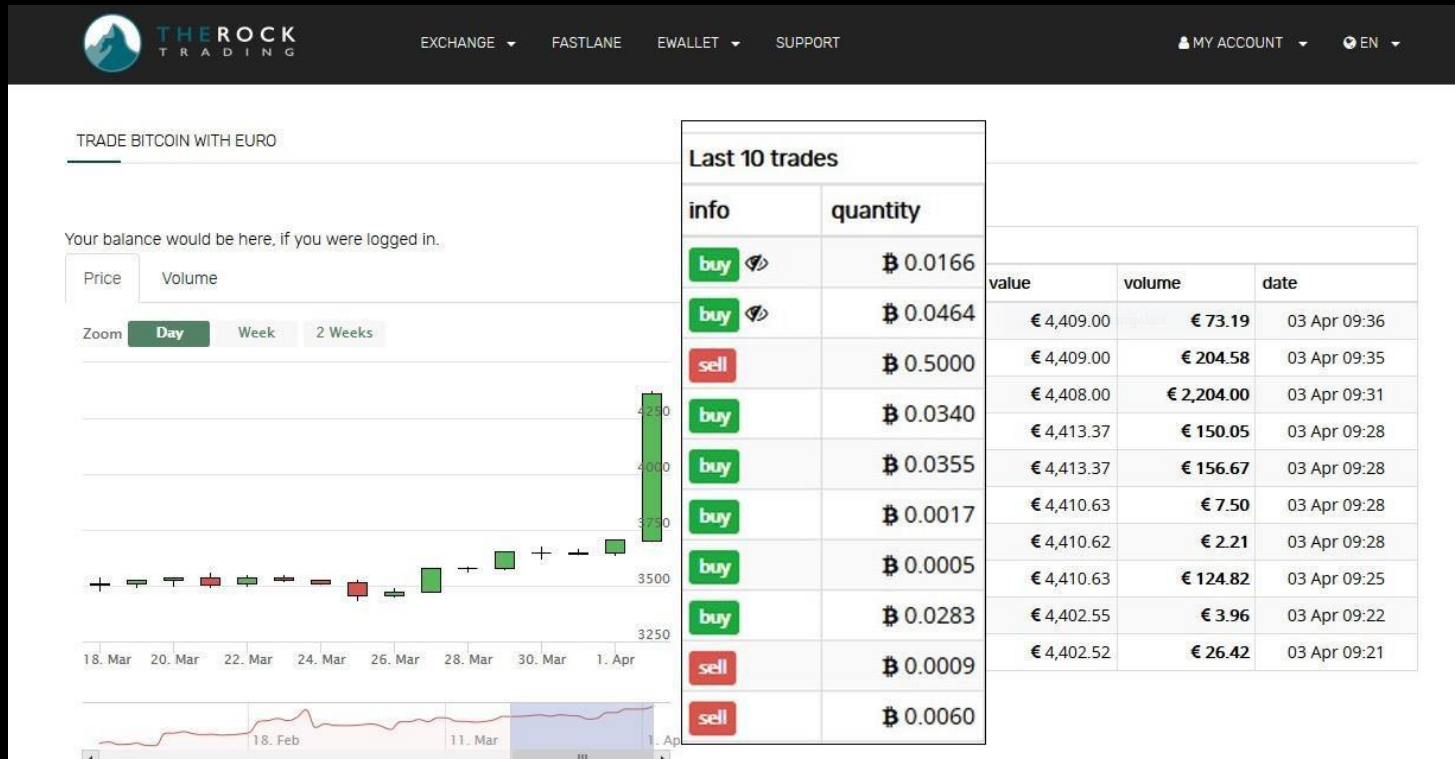
DGI Analysis on The Rock Trading



Same criteria:

1. Buy/sell trades and their size
2. Bid/ask spread
3. Distributions of volumes

1. Trades



Trades: green represents buy orders, red represents sell orders

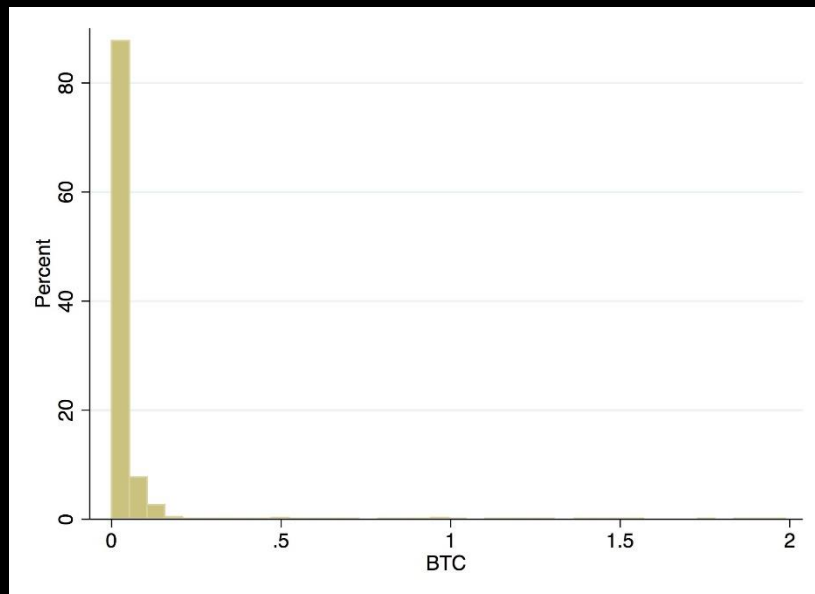
An **unequal and streaky mix** of red and green trades is evident; in this case buy order are more than sell order. This is a **clear natural pattern**

This is the behavior of a **credible exchange**

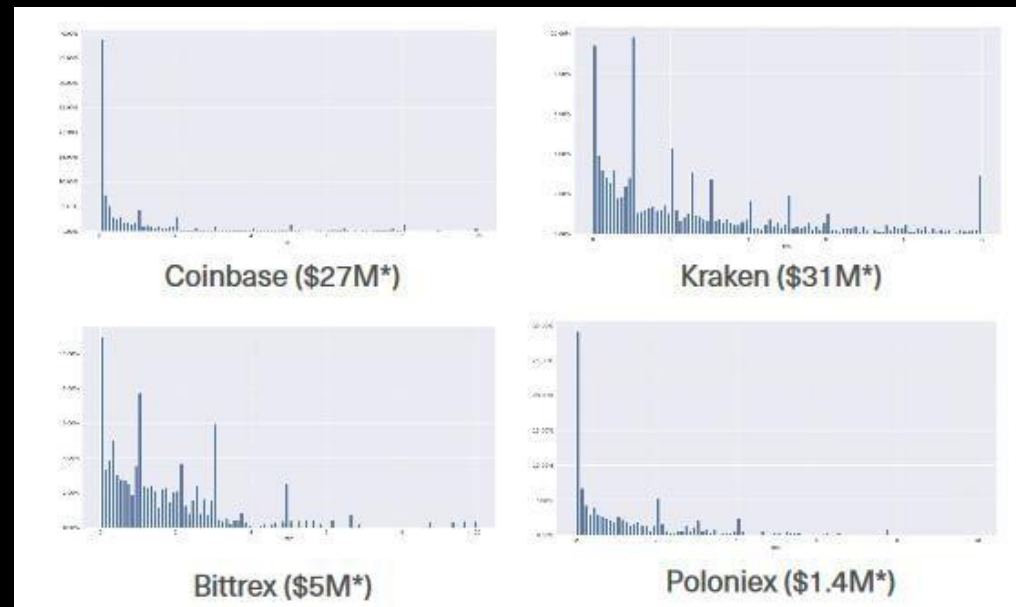
1. Trades: Size Distribution (1/2)



The Rock Trading



Credible Exchange

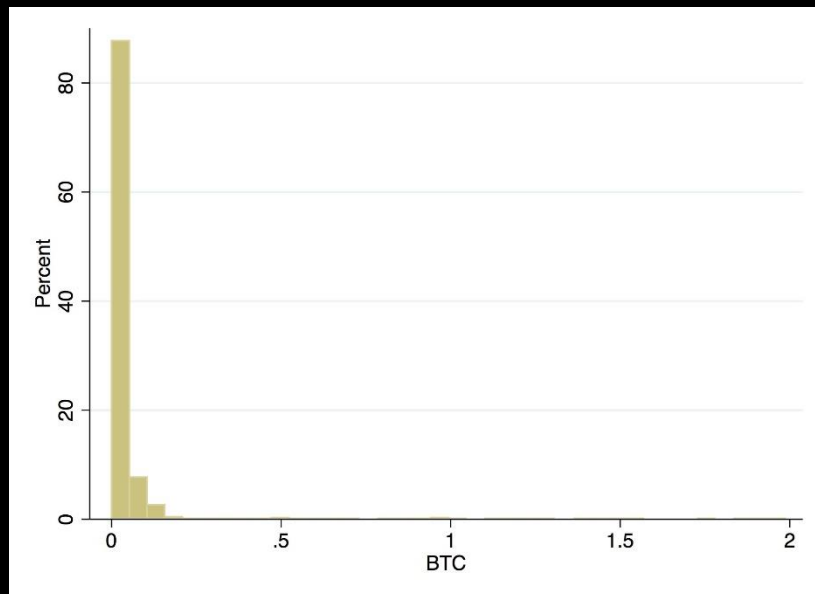


*The trade size distributions for The Rock Trading is **similar** to the distributions of other **credible exchanges***

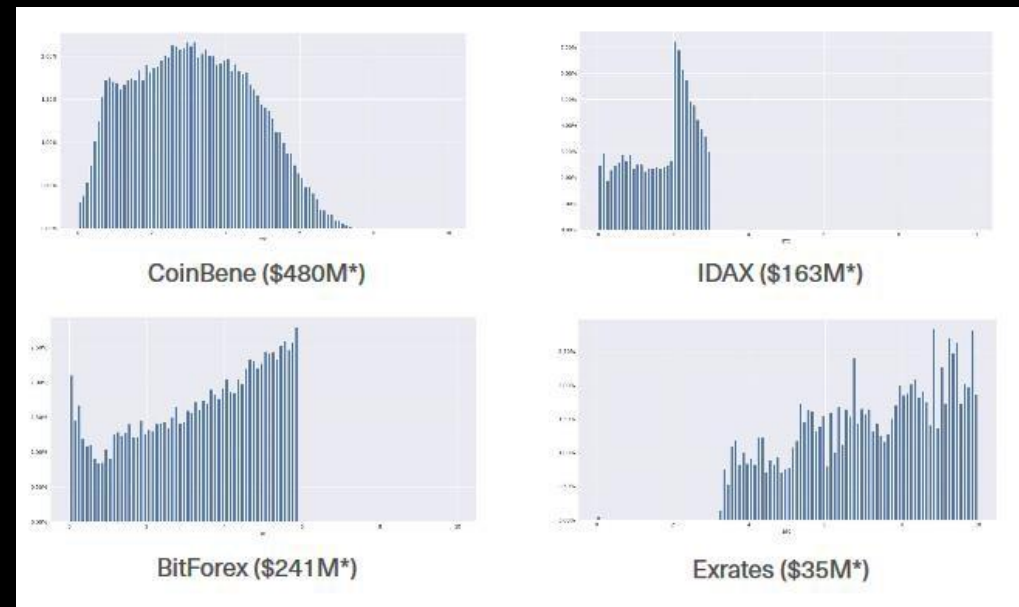
1. Trades: Size Distribution (2/2)



The Rock Trading

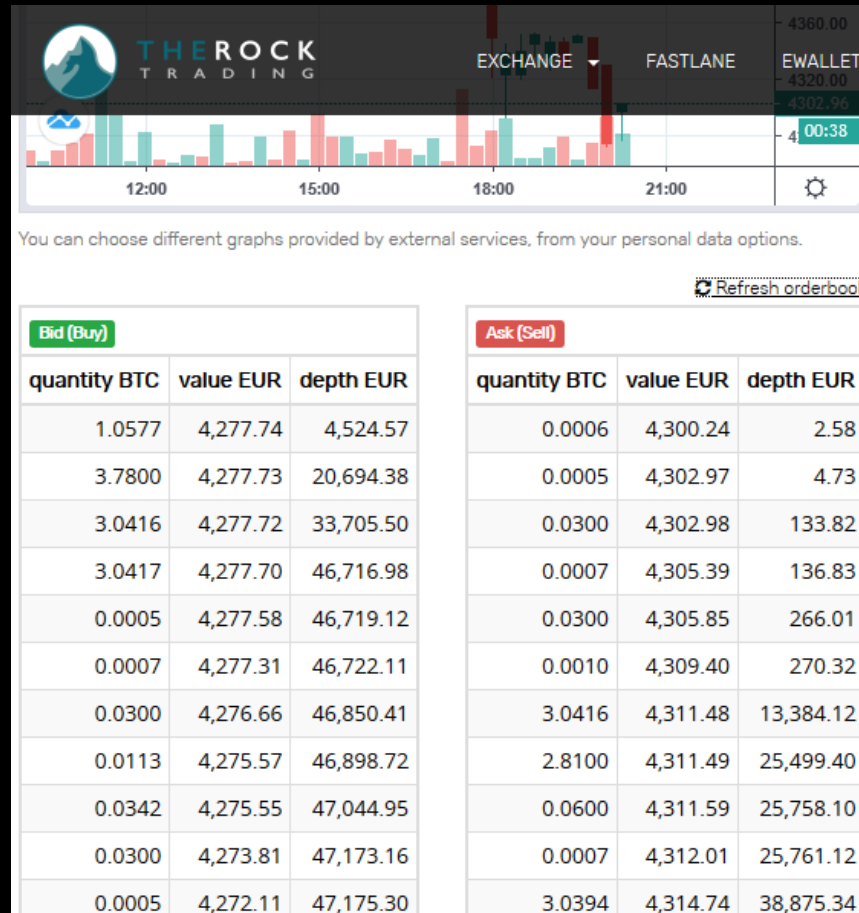


Suspicious Exchange



*The trade size distributions for The Rock Trading is **different** from the distributions of **suspicious exchanges***

2. Bid/Ask Spread



Spread: €22,5 (\$28,5)

The Rock Trading declared a trading volume of \$980.000: 25 time less than Coinbase and 489 time less than CoinBene.

This gap explain why the spread is much higher than the Coinbase one.

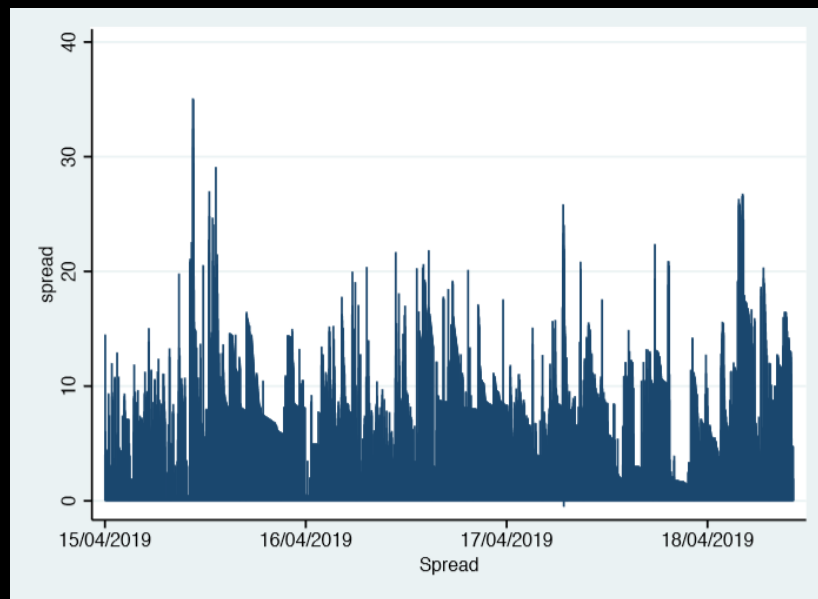
Spread is still smaller than the CoinBene one, an exchange that stated a trading volume 342 time bigger

This is the behavior of a **credible exchange**

2. Bid/Ask Spread: Pattern (1/2)



The Rock Trading



Credible Exchange

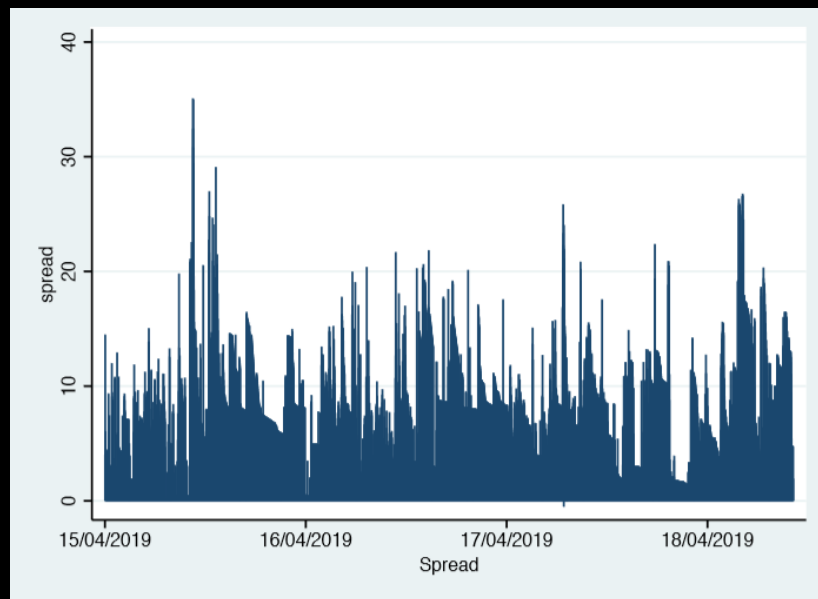


*Despite comparing different days
the spread pattern for The Rock Trading is
similar to the pattern of other **credible exchanges***

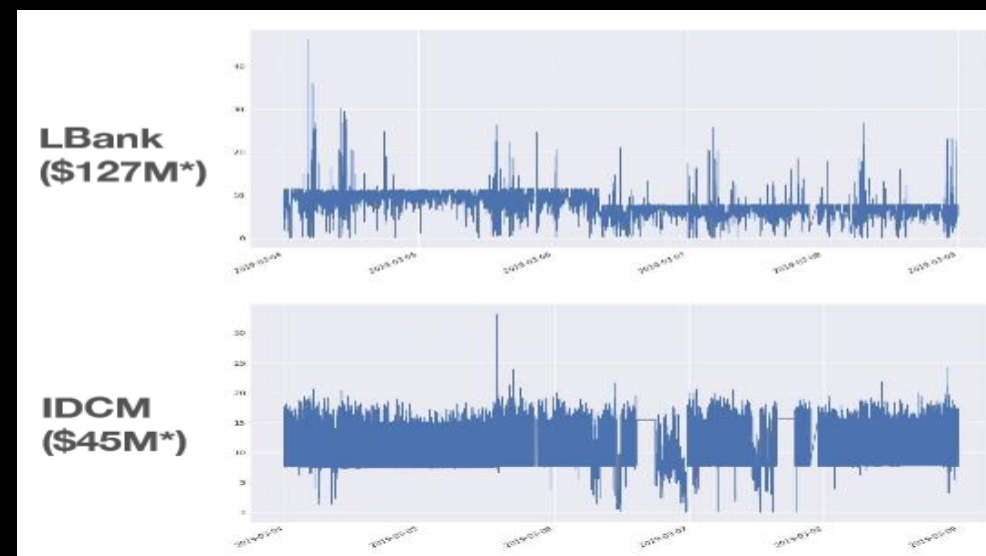
2. Bid/Ask Spread: Pattern (2/2)



The Rock Trading



Suspicious Exchange



*Despite comparing different days
the spread pattern for The Rock Trading is
different from the pattern of **suspicious exchanges***

3. Volume



Volume distribution: each of these bars reflects one hour's volume

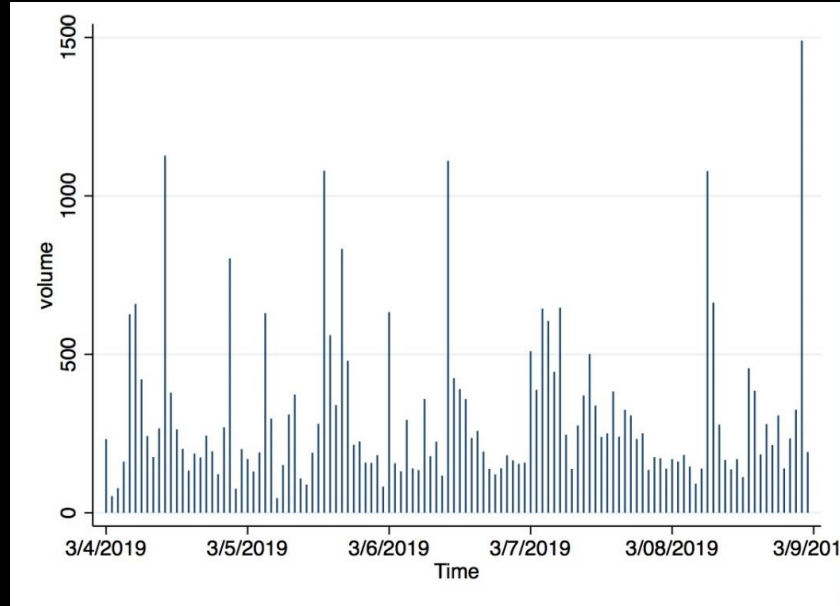
Volumes follow a natural pattern: some hours have more volume than others and volumes are not consistent for consecutive days

This is the behavior of a **credible exchange**

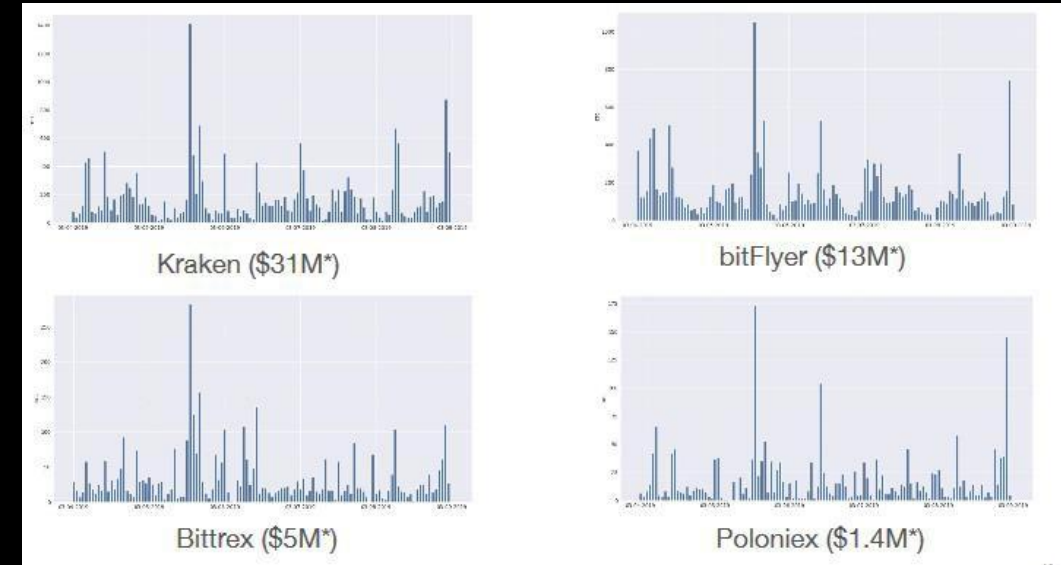
3. Volume: Pattern and Spikes (1/2)



The Rock Trading



Credible Exchange

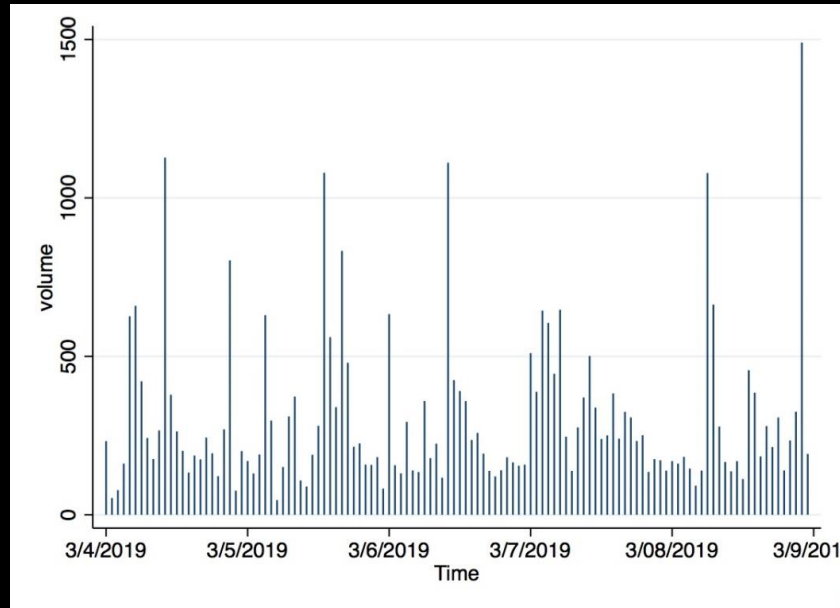


*The volume pattern and spikes for The Rock Trading are **similar** to pattern and spikes of other **credible exchanges***

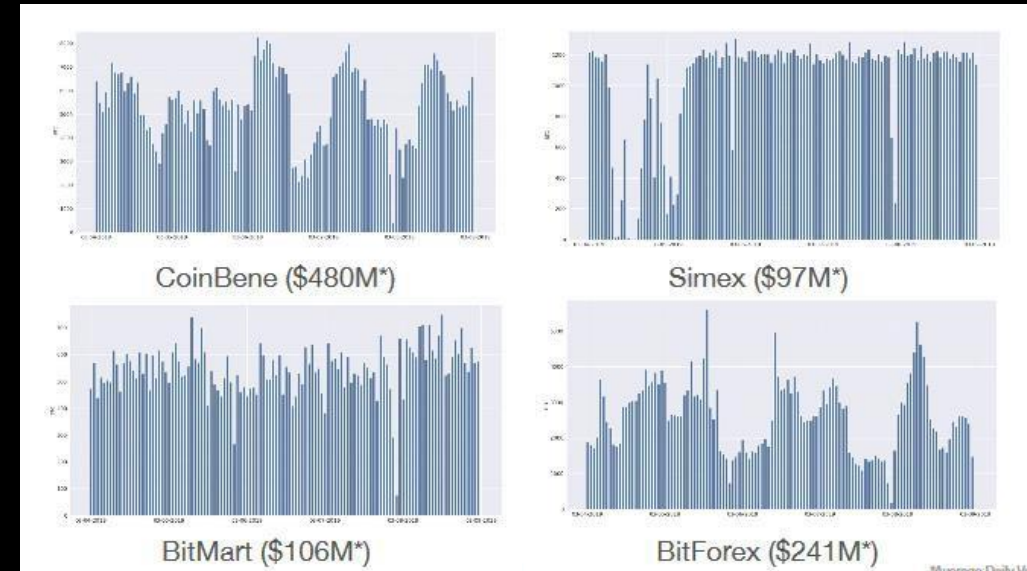
3. Volume: Pattern and Spikes (2/2)



The Rock Trading



Suspicious Exchange



*The volume pattern and spikes for The Rock Trading are **different** from pattern and spikes of **suspicious exchanges***



Conclusions



- According to the Bitwise criteria, The Rock Trading reported **trading volumes are credible**
- The Italian exchange limited operations characterize it as a regional market
- Honest reporting of trading volume is a **trust badge** for the longest running Bitcoin exchange in the world



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